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The Classic Muscle Car Era

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THE CLASSIC MUSCLE CAR ERA

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
History

by
William Blythe McKinney
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Accepted by:
Dr. Richard L. Saunders, Committee Chair
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ABSTRACT

Big and bold, loud and brash, mighty and proud, the classic American muscle car is in many ways a reflection of America at a time in history when we were on top of the world and everything seemed to be going our way. This work will examine the classic muscle car era of 1964-1974, including how it started, who helped it along, what cars were involved, how it ended, and what it meant. What the future holds for a car such as a muscle car is also examined.
DEDICATION

To my brother Robert, for inspiring my interest in cars. And to my parents, Gene and Vickie, and my wife Celeste, for their encouragement.
ACKNOWLEDGEMENTS

Thank you to my committee for their help and suggestions. Special thanks to Joe Freitas for his friendliness and assistance, and to Jim Gessner for sharing from his wealth of knowledge. Thank you to the members of the Antique Auto Club of America and to the Petersen Automotive Museum. Organizations like these help keep American automotive history alive, vibrant, and tangible.
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CHAPTER ONE
INTRODUCTION

On a brisk Saturday morning in the early spring of 1963, a young John Z. DeLorean - chief engineer at Pontiac - and two of his other staff engineers, Bill Collins and Russ Gee, got together at the General Motors proving grounds in Milford, Michigan. DeLorean planned regular “what if” sessions on weekend mornings so he and his closest engineers could discuss the possibilities of their cars in a more relaxed environment. This particular Saturday, a prototype 1964 Tempest Coupe equipped with a 326-cubic-inch engine was on a lift. The Tempest was considered an “intermediate” car, or what we might refer to as a “mid-size” today. DeLorean, Collins, and Gee were under the car, discussing the chassis. Collins casually mentioned, “You know, John, with the engine mounts being the same [a result of Pontiac’s early decision to develop one family of engines rather than a big-block family and a small-block family], it would take us about 20 minutes to slip a 389 into this thing. We’ll probably need some heavier springs in the front end, but the engine will fit right in.”¹ DeLorean looked at him, caught an approving nod from Gee, and without uttering another word they were all in agreement. One week later the group at the Saturday morning session was greeted by the first muscle car, a prototype 1964 Tempest coupe with a 389 engine in it.

DeLorean was not only an engineer, he was a visionary, a salesman, a thinker, and perhaps most importantly, a rule-breaker. In 1963, General Motors put a ban on corporate involvement in racing, something Pontiac’s success had been built on. Along with this,

they also limited cars to having cubic inch displacements no larger than 10 inches for every 100 pounds of car. This meant, for example, that a 3,000 pound car could have a maximum engine size of 300 cubic inches. Well, the new Tempest (brashly dubbed the GTO by DeLorean, a name used by supercar maker Ferrari) didn’t weigh nearly 3,890 pounds, and therefore did not qualify for such a big engine. In fact, it was pushing the rules a bit just to allow the standard V-8, a 326. With the big 389 in the car, the total weight came to around 3,400 pounds (about 100 pounds heavier for a convertible). But the “illegal” car was fast! DeLorean and his team loved it.

The brass at GM were not so fast to embrace the GTO. Pete Estes (Pontiac division manager), along with DeLorean and his crew, had broken the rules, and needed to find a loophole. That loophole came in the form of calling the GTO an “option package.” The committee that oversaw displacement-to-weight ratios only looked closely at new models and didn’t delve into this new option package for the Tempest or the upscale model LeMans. Estes and DeLorean then presold 5,000 GTO’s to dealerships before GM management could find out about it! By slipping a fast one by both the racing committee and the top brass, Estes and DeLorean had made sure the first American muscle car would hit the streets.

The top leaders at GM still didn’t want to see this type of subversion repeated, and they told Estes “we don’t want to see any more. Remember, just 5,000.” Estes only marketed the car in enthusiast magazines with a black and white insert. It initially looked like not all 5,000 units would be sold, but after the car hit the streets, word-of-mouth spread quickly, and sales picked up dramatically. It turned out the baby-boom generation
loved it. Amazing horsepower (325hp, and when equipped with Pontiac’s Tri-Power option of three 2 barrel carburetors, 348hp) in a smaller, sexier car that sold for a relatively modest price ($2,776) was just what the youth market wanted. That year 32,400 GTO’s were sold on top of all the other LeMans models, and that type of financial windfall, with almost no advertising, made everybody take notice.²

Suddenly, not only was GM okay with the idea of letting other divisions try their hand at marketing to the baby-boomers, but every auto company in America wanted in on the action. Seemingly out of nowhere there appeared on the automotive horizon a new breed of car (and a chance for more sales!), the cool, powerful muscle car!

CHAPTER TWO
WHAT MAKES A CAR A MUSCLE CAR

So what exactly made a car a “muscle car?” Over the years, what a “muscle car”
is has certainly meant different things to different people, and thus has been up for
debate. Would a 1950s Bel Air count? It had a V-8. What about a Turbo Buick of the
1980s? Although it didn’t have the V-8, it was a fast car for its day. While cars like
these certainly have their place in American performance car history, they aren’t
generally considered to be muscle cars. So what is?

The Antique Auto Club of America (AACA) is an organization of classic car
owners who tour around the country. In the spring of 2009 they stopped in Easley, SC as
part of a tour of the upstate and mountain region of the Carolinas. Outside one of the
hotels in which they were staying, the car owners were standing around reminiscing
about their memories of muscle cars. A loud fellow named Steve Justice, who was
unafraid to share his opinion, started off the discussion. He half-jokingly said “they were
crappy cars when they were new, and now they’re just crappy expensive cars. They were
the junkiest cars Detroit was making with the biggest engines. They were rattle traps.”

Other guys in the group countered “but they could run fast!”

“That’s [the only thing they could do],” countered Steve, “they couldn’t turn.”

The other guys, undaunted, continued, “back in the day everybody wanted fast
cars, and they would take off from red lights to see if they could beat the guy next to him,
no matter what we were driving…and I disagree that they were junk”

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3 This quote and the rest of the conversation were all part of personal conversation in Easley, SC April 2009
“They were junky, not junk. They were cheap cars, like a Le Mans with a big engine in it.


“That’s not a muscle car,” says Steve.

(Shocked) “A 427!” The Southern man can’t believe the words he just heard.

“Not in that heavy car. A muscle car is small…power to weight ratio. That’s a grandpa’s car (the full-size Chevy). Muscle cars are GTOs, Chevelles, Camaros, Mustangs…small cars with big engines.”

This sparked off a debate amongst the AACA members as to what was considered a true muscle car. Some of the older members present thought of the Rocket 88, which debuted in 1949, as the original muscle car. It was one of the first relatively powerful V-8 engines to be put in a car that wasn’t named Cadillac or Chrysler and therefore was more affordable for the average man. Others disagreed with this assertion and claimed the first muscle cars were the big block cars of the early sixties, like Chevrolet Impalas, Pontiac Catalinas, and Ford Galaxies. It is true these cars helped to kick off the performance wars, but they were just so big and heavy…the cars were muscular cars, not what would later be coined as “muscle cars.”

“So how would you define a muscle car,” Steve is asked directly.

“That’s the answer, he says, “small cars with big power.”

“Rear drive of course?”
“Yeah. The GTO kicked it off. The Mustang popularized it. That’s what GTO means, Gran Turismo Oblongatto. Those are the ones. Ferrari had a GTO. Those are the ones though. You see what they evolved into. 400 cubic inch bright red cars driven by overage adolescent delinquents.”

From this conversation and other research, what it means for a car to be a muscle car can be deduced. First, the car must carry a V8 engine. After all, there must be “muscle” behind a muscle car. And while performance can be garnered from turbocharged or supercharged V-6 engines, they do not have the loud, car-shaking visceral appeal of the V8. In the 1960s, the more cubic inches you had under the hood, the cooler you were.

Next, the car must have only two doors, making it look sleek and sporty. But despite the two doors, the American muscle car has always carried a backseat, therefore separating it from the smaller, more European style “sports car.” This means that while smooth and fast and very desirable, a Corvette would not be considered a muscle car. Muscle cars had to have some semblance of practicality, and that came with the lower sticker price and inclusion of a rear seat. While there is some debate over what makes the cut as far as modern muscle (for example, should powerful trucks be considered?) the classic definition of the muscle era was 1964 (the first year of the GTO) through 1974 (the last year for the Super Duty Trans Am – although Trans Ams would continue to be popular in a less potent version throughout the 70s and 80s.) The zenith of the movement

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4 It should be noted that some people will consider a Corvette a muscle car, while others will not. The Corvette is an American icon all on its own. Its run is much longer than the muscle cars; it has been built since the early Fifties and every year since up to the present-day (2009). Also, it is a two-seater, and expensive. Still, some will argue that it was right there in the performance battles of the late Sixties, racing against Hemi MOPARS and others, and so they include it in the discussion.
is generally considered to be 1970, when 100 octane fuel was still available and there seemed to be no end of it, and horsepower wars had vaulted factory stock engines into the 400hp-plus range. In the years following 1970, power began to subside as emission concerns took hold, and the auto market moved in a new direction.

Finally, to be a muscle car, a car must have rear wheel drive; important to performance enthusiasts because power is not lost in turns, and there is not the feeling of being pulled to one side under heavy acceleration as in front-wheel drive vehicles (something called “wheel drift”). Also, it was cool to show off a car’s muscle by performing big smoky burnouts. This was best done by the rear wheels instead of the front, which just make it look like your engine was on fire.

A couple of performance publications back these ideas up. Old Car Trader, a website that has become one of the largest arenas for buying and selling old cars today, released a magazine called *Muscle Car Milestones: 40 Years of American Performance* in 2004. The issue took a look at the sixties and seventies and offered up its definition of the muscle car:

People can and will argue about when the muscle car revolution really started, but for the purpose of this article, we’re placing the start in the early to mid-sixties, specifically 1964, but with credit to the earlier cars.

1964 was chosen because that was the year of the first Pontiac GTO, the car that’s most often cited for starting the whole muscle car phenomenon. It was the first factory intermediate model with an engine from a full-size car. There were performance models long before 1964, but the basic muscle car premise is a big engine in a smaller car. That’s the basic definition of a hot rod, only now you could buy a brand new hot rod at your local GM, Ford, or Chrysler dealership and finance it.\(^5\)

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Super Rod is a popular horsepower-enthusiast magazine. The August 2005 issue of Super Rod magazine listed five requirements of muscle cars.6

1. They all have V-8 engines and there are no exceptions. The technology of the day simply required V-8 cubes and torque to propel these machines to the desired power levels. During this time, engine sizes ranged from 273-455 ci.

2. All muscle cars were equipped with a performance-oriented induction system, consisting of a single four-barrel carburetor, two four-barrel carburetors (dual quads), three two-barrel carburetors (3x2s or Tri-Power) or mechanical fuel injection.

3. A proper, full dual-exhaust system was an integral part of the high-performance package. Virtually every factory muscle car had one. Often, stylish chrome tips highlighted these packages. The exhaust note, or tone, was never more important than it was during this period.

4. An actual power-to-weight ratio of at least one horsepower for every 10 pounds of vehicle weight was required. This typically meant any car with a wheelbase of 112 inches or more had a big block. Smaller vehicles with a big block greatly improved upon this. [Although they could also make do with “small block” V-8s]

5. Two-door bodies are the only models that apply to the muscle car universe. This includes “post” cars, [a hardened pillar behind the driver that helped to insure safety should a roll-over occur] hardtops, fastbacks, and convertibles.

Besides the qualifications already made, there were several other additions that could commonly be found on muscle cars. Often they could be ordered with a wide variety of performance options, ranging from different sizes of engine (for example the 1969 Chevrolet Camaro came with a choice of 231 V-6, or 302, 327, 350, 396, or even a rare but whopping 427 cubic inch V-8), to bigger brakes, disc brakes, shoulder seat belts, front and rear air spoilers, different carburetors, different gear ratios, and positive traction

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rear ends that provided more traction (and also allowed both wheels to spin during those burnouts).

Along with the performance options came the visuals. Exciting paint schemes highlighted many visual cues and announced to everyone your car was the meanest on the street. At Plymouth one could order a Roadrunner or Barracuda in colors like “Plum Crazy Purple,” “Sublime Green,” or “Go ManGo Orange.” The Chevrolet Camaro came with a variety of stripes, from the “hockey stripe” that ran around the nose of the car and down the sides, to just a nose cone stripe, to the “rally stripes,” two large stripes on the hood and rear deck lid. Muscle cars also boasted outwardly about what was under the hood. If you pulled up to an American muscle car, you would see badges like “SS” (Super Sport, given to hot Chevy’s), “GT” (Grand Touring, put on faster Fords), and “R/T” (Road and Track, given to the high performance Dodge products) on the sides of cars. Symbols like these were (and still are) used to alert would-be competition to what you were driving. If that were not enough, the cubic inch size of the engine was also commonly displayed on the front fender of many cars. Some of the Dodge cars with the famous “Hemi” engine even had the word “Hemi” painted right on the side of the car in flat black paint.
An ad for the 1967 SS Camaro highlights some of the visual cues like badges, stripes, and hood ornamentation that were common fare on muscle cars. Copyright General Motors

Every American automaker got into the muscle car game, some to more of an extent than others. Muscle cars include: from AMC certain forms of the Rambler and Javelin, from Chrysler the Dodge Challenger and Charger and Plymouth GTX, Road Runner, Super Bee, Duster, and Barracuda. General Motors got heavily involved in the movement with the Chevrolet Chevelle, Camaro, Monte Carlo, and Nova, the Buick Skylark GS, the Oldsmobile 442, and the Pontiac GTO and Firebird/Trans Am. Finally, Ford’s muscle car fleet is made up of the Torino, certain Mustangs, and the Mercury Cougar.

1969 Camaro front fender with the popular 350 cubic inch engine size displayed. Photo by William McKinney
CHAPTER THREE
WHO BOUGHT THE MUSCLE CARS

Muscle cars caught hold amongst the youth of America that had “boomed” during the late 40s and early 50s. In 1950, the U.S. population increased by 2.05% over the previous year, the second highest single-year increase of the century. And between 1947 and 1959 population growth from one year to the next would not drop below 1.66% from one year to the next.\(^7\) Since that time, the population growth has rarely been over one percent per year. The result is a bulge in the general population of the United States that would be in their teens and twenties in the years of the classic muscle car era. For these youth, the automobile meant freedom, and for young men, it meant the ability to do what most young men want to do the most… pick up girls! As AACA member Wayne Hadden put it, “It meant your status in society. It meant everything back then. It meant a babe magnet. All the girls wanted to ride in pretty cars.”\(^8\) What better way to accomplish that than in a muscle car? Who wouldn’t want to go for a ride in a bright, flashy new car? And even amongst the boys, each would want to out-do the other in terms of speed and power. Drag racing had been increasing in popularity since the 1950s along with NASCAR, and with the introduction and widespread readership of hip magazines like Hot Rod reaching many young readers in the 1950s and early 1960s, there were many eager buyers in their early 20s by the late 1960s and early 1970s ready to take ownership of the latest, coolest vehicle on the road. As the popularity of the car rose, it was aided by popular media, especially the music industry. Songs about cars and their

\(^7\) Per information at npg.org/facts/us_historical_pops
\(^8\) Personal conversation April 2009
engines were produced during the era, something that would not be common in any other time.⁹

But the era did not just occur out of nowhere. The buildup towards the muscle car started shortly after the end of World War II. This is its history, a history of spinning the tires as well as the rules, of success and failure, of unabashed marketing and the back and forth, year to year jockeying of the Big Three amidst the maelstrom of increasing government regulations and other outside pressures, of trying to stay one step ahead of the competition.

Muscle cars were more practical than some cars, but they were still not close to being the most practical sedans on the road. They were slightly more expensive than more pedestrian cars, and they certainly didn’t get the best gas mileage. Furthermore, the cars were constantly being tuned by their owners to get the maximum out of their powerplants. Throw in the extra stresses applied to a muscle car when making quarter-mile blasts on the street or the drag strip, and it is easy to see why a muscle car owner had better have had some idea of how to work on his own ride!

But what a ride it could be. Trying to put prodigious amounts of torque through crunchy transmissions to skinny tires that hadn’t caught up with the engine technology, trying to hit the perfect balance of wheel-spin and traction, and trying to keep the car between the lines as it reached high speeds was no easy task…but there’s no doubt it was exciting! As Mr. Hadden said, “I bought a new Super Bee. Have you ever been able to sit back and punch it? Now that’s a muscle car. That’s that feeling that nothing else can

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⁹ Think of groups like The Beach Boys or Jan and Dean with songs like “409,” “Fun, Fun, Fun,” and “Shut Down.”
give you. When you punch it and it sets your hind-end back in your seat, and you feel those G’s… and the sound…” The rubber laid during this period has not faded over the years, but instead has left lasting marks on American culture. The cars aren’t still loved today just because they were fast. No, they were also symbols, and symbols are powerful things. The iconic muscle cars are a reminder of a time when cruising was cool, everybody felt young, the United States was the champion of what seemed to be just about everything from war to technical innovation, to economic prowess, to music and movies, to the space race. Flashy and loud, powerful and brash, the way we view the muscle car is in many ways the way Americans view themselves. The cars are a reminder of a time of undiluted dreams, when anything seemed possible and everything seemed to be headed in America’s way. Muscle cars have become icons of America, or perhaps of what America once was and wishes it could return to again. This is their story.

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10 Personal conversation with Wayne Hadden in Easley, SC (2009)
CHAPTER FOUR
ECONOMICS

Was the muscle car successful simply because it looked flashy, sounded loud, and went fast? Was that enough for the men behind the car to sell it to the brass of their companies? What costs did the companies incur during the development and marketing phase of car production?

What about the consumer? Was the cost of the car a factor in its success? How did the economic conditions of the era help in the muscle cars’ success? The answers to these questions will be the focus of this chapter.

In the early 1960s, the baby-boom generation was coming of age. Young men were finding themselves with jobs, and subsequently money, for the first time. They were soon to descend upon the auto market looking for something cool, sporty, and sexy. Young men have always enjoyed freedom, and what better way to break free from parents than in a cool new car?

But the 1960s were not just the normal breakaway from parents as it had happened for years. That decade also saw a break of the younger generation from their parents in social ways. Young people didn’t take chaperoned dates (although double-dates were still popular), the birth control pill was on the market, and young people wanted ways to find themselves alone. At the same time, automakers were slowly warming up to the idea of marketing to young people. They knew the younger crowd wanted smaller, cooler cars, but it took several tries to settle on the right combination. AMC introduced the Rambler, Ford had the Falcon, and Chevy had the ChevyII and the
Corvair. Each of these cars was a break from the larger cars of the time, but not quite what young folks had in mind.

In the meantime, engine power had been steadily growing in the big cars. The Chrysler 300 had introduced the famed “Hemi” engine, and the Bel Air had taken the V-8 to the masses in style. Chevrolet had also ushered in some serious power with the famous 409 cubic inch V8 in its Impala. If you or your dad was lucky enough to own one, you didn’t own an “Impala” or a “Caprice,” instead you owned a 409. The motor was so powerful that it trumped everything else about the car. The Beach Boys helped immortalize the engine with their famous song “409.” It was obvious the “cool” youth of the 60s wanted to go and go fast, but it seemed the car companies had not caught onto the idea just yet.

So big engines had been developed, and smaller cars had as well, but still nobody had put the two together. It was time for a moment of destiny, when the two automotive movements would cross and become a new breed of car. It was a crazy idea to many of

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11 Partial lyrics to the song “409”
She’s real fine, my 409
She’s real fine, my 409, my 4-0-9.

Well I saved my pennies and I saved my dimes (giddy up, giddy up 409)
For I knew there would be a time (giddy up, giddy up 409)
When I would buy a brand-new 409 (409, 409)

Giddy up, giddy up, giddy up 409 (giddy up, giddy up 409)
Giddy up 409 (giddy up giddy up)
Giddy up 409 (giddy up giddy up)
Giddy up 40-nothing can catch her nothing can touch my 409

When I take her to the track she really shines (giddy up giddy up 409)
She always turns in the fastest times (giddy up giddy up 409)
My four-speed, dual quad, posi-traction 409!

Composed by Brian Wilson, Mike Love, and Greg Usher, Irving Music Inc. Lisc. by BMI. (April 19, 1962)
the entrenched brass at the auto industry headquarters. People like Robert McNamara, the head of development at Ford, was known for seeing cars simply as transportation, nothing more. He envisioned cheap transportation for the masses, but it was just plain boring. Even at GM there were strict rules as to what size engines could be placed into what cars. It was going to take someone different to break the rules. That person was John DeLorean.

DeLorean was born January 6, 1925 in the heart of Car-dom itself, the Motor City, Detroit. He had done well academically as a young man, and attended Cass Technical High School, a magnet school for honors students in Detroit. From there he attended Lawrence Institute of Technology where he earned degrees in industrial engineering and mechanical engineering. In 1952 he graduated with a masters degree from the Chrysler Institute, followed by a short engineering stint with Chrysler. From there he moved to Packard, and from there to Pontiac, where he was instrumental in helping develop the popular Wide Track suspension and wheels, along with the rope drive (a system that absorbed vibration from a 195 cubic inch 4 cylinder engine by replacing the normal solid driveshaft with high-tensile steel rope-like strands) and rear transaxle in the Tempest. His early success landed him a job as Pontiac’s chief engineer in 1961. The rear transaxle and Wide Track were very successful. Unfortunately, the engine vibration absorbed in the rope-drive, while staying out of the passenger
compartment, wreaked havoc on the transmission and transaxle and doomed the Tempest for awhile.¹²

Pontiac needed a solution. They had to get past the bad publicity generated in the Tempest, and create something that would appeal to the burgeoning youth market. But the GM ban on corporate involvement in racing was newly in effect, and so was the cubic inch rule. But those were no obstacles too large to be overcome by DeLorean and his squad. As mentioned, DeLorean broke the rules and powered through to create the car with all the right qualities: good looks, good power, practical size but not too big, and a good price.

Although they probably didn’t know it at the time, that Saturday morning in 1963 was the day the muscle car era began. Not that DeLorean, Collins, and Gee didn’t realize they had something on their hands. DeLorean went ahead and dubbed the new car the GTO, for the Italian “Gran Turismo Omologato,” or “Grand Touring Homologated” in English. It would not be long before GTO enthusiasts were calling it “The GreA? T One,” and Ronny and the Daytonas would have the inspiration they needed for a hit song.¹³

¹³ Partial lyrics to “Little GTO” by Ronny and the Daytonas
Little GTO, you’re really looking fine
Three duces and a four-speed and a 389
Listen to her tackin’ up now, listen to her whi-e-ie-ine
Come on and turn it on, wind it up, blow it out, GTO.
Composed by John Wilkin, Published by Warner-Tamerlane, Licensed by BMI (1964)
Development and Marketing Costs

Since Pontiac had originally gone with one family of engines, costs for producing the GTO were minimal. They already had an engine that would mount right up in the smaller car’s engine bay, so there wasn’t much development needed. Other GM divisions had to work a little harder. Most of these (Buick, Chevrolet, Oldsmobile) had the intermediate sized car they wanted to try the GTO formula in, they just didn’t have the correct size engine mounts to allow them to drop in their big blocks. Chevrolet entered the market with its Chevelle and Chevelle Malibu editions. Oldsmobile created what it called the 4-4-2, which didn’t stand for displacement or horsepower, but rather it indicated the car was performance minded with a 4 barrel carburetor, a 4-speed manual transmission, and a posi-traction rear end (both rear wheels would spin, not just one).

For a while, Buick also tried to get into the muscle market by using souped-up versions of the Gran Sport. In attempts to save money and time, all three (Buick, Chevrolet, and Oldsmobile) got the most they could out of their small block engines. This was met with some success, but for a while, the GTO was still the car to have (if you couldn’t afford the payments and insurance costs of a Corvette that is). It became apparent to everybody that they were going to have to produce big block power if they wanted to compete in the new battle over baby-boomers and their muscle dollars.

The major automakers were not alone in attempting to tap into the new market. Sometimes, an outside performance-oriented company would step in to partner up with an automotive company to help sell some special versions of particular cars. One good example is the relationship between Hurst shifters and Oldsmobile. Oldsmobile had
some success with America’s youth with the 442, but by-and-large the company did not capture the essence of the young market. Hurst, a known and respected company that made gear shifters for cars, decided to team up with Oldsmobile to help create some special versions of cars.\textsuperscript{14} Hurst was already a known name among young people, as they had made the shifters of choice for hot-rodders for quite some time. The cars Hurst and Oldsmobile would make would be called “Hurst/Olds” editions of the Cutlass and 442. The cars would come with Hurst shifters (of course) but other modifications came as well. For example, the Hurst/Olds came in special colors, usually white with gold stripes or silver with black stripes. The engines that came in the cars would be improved as well. Hurst was able to buy some bigger displacement engines from Pontiac, which Pontiac couldn’t put into their cars because of GM internal rules limiting intermediate-sized production car engines to 400 cubic inches. But when Hurst got the cars to modify them, they were free to put in any engine they liked. So Hurst would simply swap out the large Oldsmobile 455 engine they had purchased separately from the 442, and sell the smaller engine that came in the car back to Oldsmobile. In this way Oldsmobile bypassed the internal rule of GM and achieved more performance. Hurst gained publicity and some sales, and the consumer got a 442 with a truly big big-block engine. Everybody wins.

Another example of fringe groups helping to sell cars was certain dealerships who would soup up a car before they ever sold it, making in essence their own “special

\textsuperscript{14} Hurst originally approached DeLorean with the idea for Pontiac. DeLorean liked it, but GM leadership decided Oldsmobile was in greater need of good publicity with young buyers than Pontiac. From Mike McNessor, “The Silver Fox,” \textit{Hemmings Muscle Machines} (April 2009) p. 18
edition” cars. A famous example of this was a car dealer called Baldwin Motion. According to its website, Baldwin Motion represented a partnership between Baldwin Auto Company, a franchised Chevrolet dealership dating back to the early-1920s, and Motion Performance, a high-profile speed shop with a reputation for building fast Chevys. Baldwin would buy muscle cars, like Camaros. They would ship them to Motion for performance upgrades like new high-flowing heads or sometimes completely new engines, depending on what the customer wanted. The cars would be shipped back and sold (with warranty) from Baldwin. The cars came with quarter-mile time and speed guarantees or you could return the car for your money back. They never had a single car returned. Today Baldwin-Motion cars are some of the most valuable muscle cars on the market, trading owners at prices of well over $150,000.

Did the Baby Boomers Actually Have the Money for These Cars?

The conventional thought on the muscle car era is that the up-and-coming American youth of the 1960s had the drive and the money to make the muscle car movement happen. But was this actually the case? An in-depth look at some of the economic trends of the times will be revealing.

There are several factors to look at. The first would be people’s salaries. How much money did the average person have in the 1960s? Let us start by looking at a lower-end income. In 1961, near the start of the muscle car era, the average domestic

15 http://www.officialbaldwinmotion.com/history.htm
worker’s salary was $2,356, which in today’s money is $13,540. By 1976, near the end of the muscle car era, the average domestic worker’s salary was $6,479, which is $19,633 today. Compare that with a modern average of $15,512 and you can see that people with low-wage domestic jobs had at least around the same amount of money to spend in the muscle car era as they do today, if not more.

If young buyers were just working right out of high school for minimum wage, the wages were still the best they have ever been. Federal hourly minimum wage was at its (relative) maximum right in the middle of the muscle car era, rising steadily from what is in today’s value: $5.60 in 1950, $6.61 in 1957, $6.92 in 1961, $7.35 in 1963, $7.54 in 1967, and maxing out at $8.27 in 1968. If a young person wanted to “save their pennies and save their dimes” indeed a 409 or any other muscular engine was not out of the range of possibility.

Overall, average U.S. national annual salaries were strong as well. In 1971 the average annual salary was $8,144 ($34,655 in year 2000 money) compared to the actual year 2000 average of $29,469. If a kid wanted a job, the money was there.

So what about the cost of classic muscle cars? Well, in 1969 the average U.S. automobile wholesaled at $2,280, which is around $12,000 today. In 2002 the cheapest Ford sold for $11,911, so the cost from an average car of the muscle car era to cheapest today is very close. Muscle cars could be bought brand new for around $3,000. For example, a 1968 Chevrolet Camaro Z/28 was $3,010 and a 1971 Dodge Challenger was $3,273.17 That would work out to about $15,000-$16,000 in today’s cash. Considering

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17 Prices given in *Hemmings Muscle Machines* Aug. 2008 p. 25
that today's muscle cars sell for around $27,000-$35,000, that doesn’t sound like a bad deal at all!

But what about other things that might take a young buyer’s money? Here is where the real difference is seen. In the 1960s, the other things taking a young man’s money were just not as expensive as they are now. Take college for example. In 1960 and 1970, yearly tuition at the University of South Carolina for an in-state student was $80.00 and $150 respectively, which equates to $465.12 and $666.67 today. That is cheap. Consider that today (2009) the cost of tuition for attending the same institution for an in-state student is $8,438 a year!\(^{18}\) Obviously money for other things (like muscle cars) was easier to come by in the 1960s.

What about another major cost for a young man, like a new home? In 1965 a new home would cost a person an average of $20,000 ($114,222 today), and in 1970 the new home cost was $23,400 ($108,496 today). Compare with the average cost of a new home in 2002, which was $177,300. Again, more money was available for other interests (like cars!)

When it is all taken into consideration, there is no doubt the market was ripe for the muscle car. The bottom line is that the cars were not out of the average person’s price range, money was coming in like never before, and the costs of other normal “big ticket” items were low. Economically, things had aligned perfectly for the muscle car movement. Whether the same can be said for today’s versions of their predecessors is doubtful, and the new muscle car movement appears to be aimed at generating the

\(^{18}\) From the University of South Carolina website, http://www.sc.edu/bursar/schedule_columbia.shtml
memories of older (wealthier) buyers rather than hoping to pull in the youth of today, for
the money and credit simply are not there. Combine that with the economic uncertainties
that abound, along with upcoming fuel and emissions regulations, and it can be said the
pavement isn’t particularly smooth for the future of muscle cars. But, according to
Angus MacKenzie’s October 2008 *Motor Trend* article, American performance will not
disappear, it will just be forced to change. MacKenzie argues for keeping the American
muscle car in its traditional rear-wheel-drive form. Front-drive sport compacts are more
of the European tradition, he says. The car can’t be all-wheel-drive because the systems
are complex and expensive, and the American muscle car should be neither. About the
only change he argues for is making the cars a bit smaller and lighter, while replacing the
V-8 with turbocharged V-6 gas or diesel engines. This is sure to be met with some
trepidation from muscle car traditionalists, but due to higher fuel prices and increasing
emission controls, it may be an unavoidable economic price that has to be paid.

19 New Corporate Average Fuel Economy guidelines set by the Obama administration will require a fleet
average of 35 miles per gallon for an automaker’s fleet, way up from the current 25 miles per gallon.
20 *Motor Trend* Oct. 2008 p. 6
CHAPTER FIVE
THE 1950s HOT ROD MOVEMENT

Although the 1964 Pontiac GTO is considered to be the first muscle car, it was not the first car to fit the muscle car formula. It was simply the right car at the right time. The GTO had John DeLorean, an engineer unafraid to try new ideas, and Jim Wangers, an advertising pro working for Pontiac who was in touch with the up-and-coming baby boomers. The wave of youth, newly endowed with driver’s licenses, crested right along with the convergence of big engines and beautiful automobiles. It was a match made in automotive heaven. But let us not forget there were young people alive before 1964, and there were cars too, and some of the young people wanted to go fast. If the companies didn’t offer them that ability, they just took it upon themselves to make it happen. After all, this was the generation that had fought or grown up through the Second World War. They were tough, innovative, and unafraid. They weren’t about to let a lack of factory appointed power set them back. And so, they started the ripple that would become the wave of the muscle car. This is the story of the hot-rodders.

Today’s troops are also unafraid and innovative, but they have outlets the old-timers didn’t. The U.S. Army maintains a program called the Army MWR (morale, welfare, and recreation). The organization has undergone several name changes since its beginnings in World War I, when Salvation Army sisters ministered to soldiers’ needs behind the lines. In 1940, the program was adopted officially by the Army and named the Morale Division, and later called Special Services. As it stands today, the Army MWR’s mission is “to serve the needs, interests and responsibilities of each individual in the Army community for as long as they are associated with the Army, no matter where
they are. MWR contributes to the Army’s strength and readiness by offering services that reduce stress, build skills and self-confidence and foster strong esprit de corps.”

One of the services offered to troops today is to let them drive a NASCAR car around an official track. A July 17, 2009 article talks about soldiers having a need for speed, and the Army providing a method for those soldiers to get their speed “fix.” To quote the article:

“The Soldiers coming back [from deployment] are looking for outlets,” Sgt. Danielle Colson, [Department of the Army’s Better Opportunities for Single Soldiers representative], said. “They’ve been in that high-adrenaline area so they need an outlet in a safe environment. Rather than doing something stupid at top speeds on the highway, they could take out their anxiety, their stress and their built-up emotions on a track.”

“We provide activities that let soldiers, in a constructive manner, get that adrenaline rush,” said Josh Gwinn, director of Soldier programs at FMWRC. “We mitigate the risk through structure, instruction and safety devices versus getting on a motorcycle and going 120 miles per hour to get that rush in a very unconstructive manner, which can result in injury or death. A program like this would probably be a much better option.”

After all, Gwinn added, “street racing is an issue for the 18 to 25-year-old age-group, which is a big part of our force.”

You can bet that the 18-25 year old demographic was exactly what was being targeted by the muscle cars designers in the classic era.

Soldiers today have an experience not all that different from soldiers returning from World War II. The main difference is that today, there are more outlets for their need for an adrenaline rush. If not through MWR activities, a soldier today can at least purchase a powerful car or motorcycle right off a dealer lot. But it was not that way in 1946. At that time, a soldier came back to America after operating high-speed, heavy

21 http://old.armymwr.com/portal/about/
22 Article by Tim Hipps, FMWRC Public Affairs, and can be found here: http://www.armymwr.com/news/news.aspx?nid=133&CategoryId=3&c=y
duty war equipment, and walked back down the dirt or gravel road to his home. While it might be nice to be back on the farm getting home-cooked meals instead of something out of a can, the nagging need for speed had been implanted in the G.I.s.

Not having much money, but having plenty of desire, the former soldiers took to the streets to try to make the fastest machines they could. To start with, a car was needed. The most popular were cars from the pre-war era, mostly Plymouts, Chevys, and especially Fords, since the Model A and Model T were so abundant. Plus, starting in 1932, Ford offered its famous “Flathead” V-8 in its cars. This engine had its issues: its valves were inefficiently located below the combustion chamber, which sat off to the side of the cylinder instead of above it like modern engines.\(^\text{23}\) Because of this, temperature was not used effectively, plus it put a strain on the engine parts and could cause them to fail. And in its original 1932 form, the engine put out just 85 horsepower.\(^\text{24}\) But despite these issues, it was the only V-8 within the price range of a young man. Other V-8s came in Cadillacs and Oldsmobiles, but those were just too expensive, and the eight cylinder engines in Buicks and Pontiacs were inline instead of the “V” shape. That meant those engines had long crankshafts that couldn’t handle high rpms, which in turn meant those wouldn’t work either. If a hot rodder couldn’t get his hands on a Flathead V-8, the Chevy “stovebolt” six cylinder was the best fallback option.\(^\text{25}\)

\(^{23}\) Leffingwell and Holmstrom p. 27
\(^{25}\) Leffingwell and Holmstrom p. 27
A typical “hot rod” with the front and rear fenders and front bumper removed to save weight. Photo by William McKinney

Once a proper car and engine had been acquired, the next step was to make the car as light as possible. After all, weight was the enemy of speed. And if you couldn’t afford the power to overcome the weight, the logical solution was to make the weight suitable for the power. Hot rodders would usually start by taking the bumpers off cars. Then, if they really wanted to make a fast car, they would remove the front and rear fenders, leaving the wheels exposed. Back seats and spare tires were also removed for competitive runs, which were starting to become popular on the dry lakebeds of southern California in the late 1940s. But getting out to a lakebed took gas, meant you were probably going to be sleeping in your car, and eating something you packed before the trip. The much more economical thing to do was to try to find some deserted street and
rip off a run as fast as possible. Finding out a car’s top speed was usually the goal on the lakebeds, but without limitless straight, flat roads around town, shorter distance runs had to be made: in other words, drag racing. The first recorded organized drag race occurred in 1949 at Goleta Air Base near Santa Barbara, CA. A small ridge approximately a quarter mile down the runway was chosen as the ending point for the race, and so whether by luck or divine intervention, the magical drag race distance was born. By 1952 there were six drag strips in Southern California, and by 1955, that number had grown to 68 strips in 31 states. As Leffingwell and Holmstrom point out, muscle cars are a descendent of the drag racing mentality. “If a muscle car can corner like a kart, that’s great, but it’s just gravy. If it can’t rocket through a quarter-mile strip faster than an ordinary sedan, it’s not a muscle car. The requirements of drag racing drove the development of the American muscle car, and every aspect of the final product reflects the needs of the drag racer.”

**Auto Clubs, The Media, and History Repeating Itself**

A big part of the reason muscle cars were able to rise to prominence so quickly was media coverage. This was not an unprecedented occurrence. In the United States, the 1950s are sometimes viewed historically as the “Golden Years,” a time when things were thought of as being simpler, but also better. The country was stable economically, families were generally prosperous (especially compared to the pre-war years), and the

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26 Leffingwell and Holmstrom p. 31
United States seemed to be on top of the world. France had experienced a similar historic era from 1880-1914. In France, that era is known as the Belle Epoch, the “Beautiful Era.” That period happened to coincide with the advent of the automobile, and France was at the forefront. By the time the first gasoline powered car was built in the United States in 1893, the two original French firms, Panhard et Lavassor and Peugeot, had already built 153!27 Paris became the center of the French automotive industry, and in no small part because of the journalism coverage there. Newspapers had become increasingly popular, and the motorcar made an excellent new topic.

In 1896, Count Albert de Dion, a “notorious boulevardier from an ancient noble family and with an American mother,” as well as part owner of the Dion-Bouton firm, formed the Automobile Club de France “to promote races and otherwise improve the health of automobilism. This organization, comprised primarily of young aristocrats, became identified as right-wing politically, as was automobilism generally at the turn of the century.”28 The left wing would often try to harass the right-wingers by setting 6 mph speed limits, which is slower than the average man can run, and they even raided De Dion’s factory and Auto Club (vainly) seeking evidence of anti-Republican conspiracies.29 But the Auto Club was catching on quickly, and by June of 1897 had 1,000 members. The Club would organize the first-ever car show, the Paris Auto Salon, in 1898. That first gathering drew 340 exhibitors and 140,000 visitors in attendance. By

27 Laux p. 350
28 Laux p. 352
29 Laux p. 351-352
1905 the Salon had become a yearly event, and that year it would attract 1,180 exhibitors and 500,000 visitors.\textsuperscript{30} Automobile fever had spread quickly through France.

Fast-forward to late 1940’s America, and a similar story could be told. By this time, the United States was the leading producer of automobiles in the world. Since hot rodding had become popular with the young culture, especially in Southern California, two enterprising young men, Robert E. Petersen\textsuperscript{31} and Bob Lindsay, decided to create a magazine to cover the emerging hobby. In 1947, the two men put up $200 of their own money to produce the first issue of \textit{Hot Rod} magazine. Petersen and Lindsay printed 10,000 copies of \textit{Hot Rod} and went around Southern California to drive-ins and drag strips, selling the issues one at a time.\textsuperscript{32} \textit{Hot Rod} provided records of drag racers and what times they were running at what track with what engine setup. It also promoted doing things yourself; innovation. Its popularity caught on quickly with its audience. Future Pontiac advertising czar Jim Wangers wrote in \textit{Glory Days} “I didn’t really know what I was doing, but if \textit{Hot Rod} said it worked, then I had to have it.”

In Belle Epoch France there were those who opposed the automobile, and in America there were those who were against the whole hot rod movement, and especially the magazines that were promoting it. According to Leffingwell and Holmstrom “the American Automotive Association (AAA) considered Petersen, Lindsey, and anyone associated with the hot rod movement juvenile delinquents, all of whom should be locked

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\textsuperscript{30} Laux p. 352

\textsuperscript{31} The Petersen Automotive Museum in Los Angeles was founded by Mr. Petersen, and traces the history of the car with many rare automobiles and “hand’s on” displays.

\textsuperscript{32} Leffingwell and Holmstrom, p. 33
away for the good of the whole country. When the magazine sponsored a car in the Indianapolis 500, officials tried to wipe the offending Hot Rod logo off the car.”

In 1951, Wally Parks, the chief editor for Hot Rod and former organizer of the Southern California Timing Association - the first organization to time salt-flat runs - formed what would become the preeminent force in drag racing, the National Hot Rod Association (NHRA). The NHRA was intended to “create order from chaos by instituting safety rules and performance standards that helped legitimize the sport.”

Now there was an official group dedicated to drag racing, and helping the sport grow. Just like how the French Auto Club, with its Auto Salon, attracted many vendors and visitors to automobile making, the NHRA would attract drag racers and spectators to its events. It held its first official race in 1953 on the Los Angeles Country Fairgrounds parking lot in Pomona, CA. By 1955, with the help of coverage from Hot Rod and other enthusiast magazines that had popped up like Car and Driver, Motor Trend, and CarCraft, the NHRA was able to put on its first national event, simply called the “Nationals” in Great Bend, Kansas. For the next six years, the Nationals would be held in various cities around the country (helping generate interest in different regions) before settling in their permanent location of Indianapolis, IN.

With Hot Rod and the NHRA both growing, and with the success of each helping the other, the hot rod movement of the 50s grew until it was no longer regionalized just in Southern California, but a nation-wide phenomenon. As Americans started buying their

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33 Leffingwell and Holmstrom, p. 33
34 www.nhra.com – the official website of the NHRA
first televisions, advertising could now be seen nationwide, and information and ideas started to be shared more rapidly. When it was all added together, the hot rodding movement of the 50s had started a trend that was soon to be picked up in the 60s by the auto manufacturers themselves. The dawn of the muscle car was not far away.
CHAPTER SIX
REVVING UP – THE LATE 1950s AND EARLY 1960s

Cars needed more power. In the late 1950s Detroit started realizing this, not so much as a response to the drag racers and the NHRA, but just for practical reasons. The members of the baby boom generation that would go on to make up the bulk of the consumers of muscle cars were kids in the late 1950s. This meant most families who went car shopping were looking for bigger cars, ones that could carry lots of kids long distances in relative comfort (think minivans and SUVs today). So as cars got bigger, the poor engines that had powered the previous generation of automobile just weren’t up to the task. The new luxuries cars were providing were also sapping power, luxuries like power steering, automatic transmissions, air conditioning, and power brakes. Plus, as of 1956, interstate freeways began to be constructed. These new freeways would allow for high speed travel, and with their on ramps, cars needed to be able to get up to speed in a relatively short distance. Clearly, new engines were needed.

The logical way to produce more power was of course to start making more V-8s. Ford’s antiquated flathead design just wasn’t going to cut it anymore. It was time for engine design to move to the more efficient overhead valve setup. In 1949 Cadillac and Oldsmobile both introduced new overhead valve (OHV) engines. These were more expensive brands of automobile, but the engines themselves were quite potent for their day. The Oldsmobile engine was known as the “Rocket 88.” It was a 303 cubic inch

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35 Interestingly, muscle car owners often times didn’t want these luxuries. Doug Perry, owner of a 1968 Plymouth Roadrunner and 1971 Plymouth GTX specifically bought the cars without such devices to try to “keep from robbing any power from the engine.”
engine good for 135hp. The Cadillac engine was rated at 160hp, which was well above anything else in 1949. The Oldsmobile was a bit more accessible for the common man, and many “old-timers” remember it fondly as being the first “hot” engine that came out of Detroit.\footnote{Personal conversation with AACA members April 2009}

Chrysler jumped into the new power game in 1951 when it introduced its now famous “Hemi” engine. The Hemi is so named because it has hemispherical combustion chambers, allowing for the most volume from a given surface area. The engine came about as part of Chrysler’s WWII engineering, as engineers tried to get the greatest power they could for tank and aircraft engines. The new Hemi engine produced 180hp, tops in Detroit, but was only available in top of the line cars like the Imperial, New Yorker, and
Saratoga. These cars didn’t appeal to young people, and even if they did, youngsters didn’t have the cash to buy such a thing, but at least the engines were getting put out there.

In 1955 Chrysler made what it has claimed in recent commercials was the first muscle car, the C-300. It was a beautiful new design, created by famous automotive designer Vergil Exner, and it had the guts to go and go fast. Chrysler had experimented with putting two four barrel carburetors on its Hemi engine, and the new engine had 300hp, good even by today’s standards. In 1955 it was king of the road, and subsequently the race track, as it would be the winning car at Speed Week at Daytona. The car was a two door, rear wheel drive, V8 powered car. It was very stylish for its day, kicking off the tailfin craze with subdued fins over the rear lights. If Chrysler claims it invented the muscle car, why didn’t it go down that way in history? Two problems remained. First and foremost, the car was not cheap. Coming in with a hefty $4,440 price tag, the youth market couldn’t touch it. A generation later, that market would be able to sustain a plethora of muscle offerings, but the time wasn’t right yet. Secondly, although the body was stylish for its day, it didn’t have the hard edges that would define “in-your-face” muscle. It still sort of resembled a family sedan, and the muscle cars struck no such impression. So the C-300 was really the closest thing yet to a muscle car, but all the pieces just weren’t in place yet. Columnist Ken Gross recounts his first encounter with the glorified Chrysler in an article in the second issue of Hemmings Muscle Machines (a new publication celebrating American performance cars of all eras). Gross wrote:
I’ve given some thought to last month’s column, where I blithely passed over Chrysler’s 1955 C300 as the first muscle car in favor of Pontiac’s trend-setting 1964 GTO. But a personal remembrance got me thinking. I was only thirteen years old, but I’d already been reading Hot Rod, Rod & Custom, Motor Trend, and Road & Track for two years…

My pal Aaron Fishman and I had read an exciting announcement in the Lynn Daily Evening Item. Local Chrysler-Plymouth dealer Steeves Motors was previewing the latest Chrysler road burner. I’d seen a few ads but no road tests for the Chrysler 300. Road & Track mainly wrote about “foreign” sports cars; Motor Trend covered “family” Chryslers, but they ran an ad for the new 300 in May 1955. “It’s the most breathtaking car you’ve ever known,” the copy gushed. “You’ll be off and away in this brilliant new low-slung beauty to the throaty roar of 300hp – the greatest, safest performance in any American car.”

News had already trickled in that the Chryslers were the fastest stock cars at the Daytona Beach Speed Trials. Anxious to see for ourselves, we rode over to Steeves on our bikes to see what the commotion was all about…I’ll never forget the moment when we first spotted the C300. Crouched alongside Steeves’s showroom was a low, mean-looking white hardtop. Its hood was devoid of an ornament, the nose badge sported a checkered flag; it was devoid of the lathered chrome trim so popular in that era. Out back, dual exhaust tips hinted at what was under the hood.

A salesman came out of the showroom, probably to ensure we didn’t scratch it. “Can we see the engine?” we chirped in unison. Rather than turning us away, he dramatically lifted the hood. There it was, a 300hp, 331-cu.in. Chrysler Hemi, painted gold, topped with a triangular air cleaner that barely hid two Carter WCFB four-barrels. It simply reeked of power and, yes, muscle. We hung over the fender, just staring at the engine, without realizing he’d gotten in behind the wheel. Next thing, the salesman cranked the
starter and the big Hemi thundered into life with an exhaust rumble that gave us chills. With its solid lifters and hot cam, it idled with a convincing rrruump, rrruump, and it seemed ready to spring like a big cat. What a car, and only Chrysler had anything like it!37

In 1954, Chevrolet would launch its new V-8 offering. Dubbed the “Turbo-Fire V-8,” Chevrolet’s OHV engine was not the most powerful engine coming out of Detroit, but it was the most affordable, and that meant a lot. The new 265 cubic inch engine was good for 162 horsepower, but that number could jump to 180 if ordered with the special “Power Pack” consisting of a four barrel carburetor and dual exhaust. Around that time, Jim Wangers started working for Campbell-Edward, the advertising agency that promoted Chevrolet. Wangers, a young man, realized Chevrolet’s “Motoramic Chevrolets” advertising slogan was missing the mark by promoting comfort and convenience and not up-playing the new V-8. Wangers was convinced Chevrolet had a winner on its hands with the Power Pack backed Turbo-Fire V-8 and set out to prove it.

In 1955, racing at Daytona was not as big of a national deal as it is today. Most of the top men in Detroit didn’t even know about Speed Week.38 Wangers did, and he wanted to go see first hand how the new Chevy set-up would work. Paying his own way (after being denied travel money by his boss), Wangers witnessed the birth of Chevrolet performance. Chevrolet didn’t sponsor racing at the time, but privately owned Chevys took the top four spots in the standing mile acceleration tests, the top two spots in the under-$2,500 class, three of the top five spots in the two-way measured mile, and first place in the 100 mile

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37 Ken Gross, “Chrysler’s C300,” Hemmings Muscle Machines Vol.1, Issue2, p. 43
38 Speed Week was a week-long event involving amateur racing of all sorts. Back in the 1950s, cars raced right out on Daytona Beach itself on the hard-packed sand at low tide.
An AP article went out describing what a success the Chevrolets had enjoyed at Daytona, and suddenly calls came pouring in to local dealers by people wanting to know how to get the setup used at Daytona. The local dealers had not been briefed on the topic by the regional offices, so they honestly didn’t know what to tell the callers. When the regional offices called headquarters, suddenly the big shots went looking for who knew exactly what had happened down at Daytona. Word got back around that Wangers had been down there, and suddenly he was the “performance expert” at Chevrolet, which found itself for the first time interested in racing, although not enough so to sponsor it officially just yet. Wangers realized he needed to capitalize on this success, and got together with the marketing staff and produced the new advertising slogan for 1956 calling the upgraded Super Turbo-Fire V-8 “The Hot One.” The Hot One cranked out 205 horsepower, and by this time, gearheads and tuners were able to coax even more power out of the engine. Chevy engineers made two even more powerful setups of the engine that year, one making 225hp with two four barrel carburetors, the other 240hp with a special racing camshaft. The best thing for consumers though, was that they could get all this power in a stylish car at a price that was within their financial reach.

1957 would mark the year of one of the most iconic American cars ever, a ’57 Cheverlot Bel Air, a car Motor Trend would in 2009 call the number seven “coolest” car

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39 Leffingwell and Holmstrom p. 46
it had tested in its 60 years. The magazine gushed “look up “the ‘50s” in the encyclopedia, and you’ll see a picture of the Bel Air.” With its big tailfins and two-tone paint, it really stood out. And since The Hot One lurked beneath the hood, it was a hoot to drive, knocking down the quarter mile in 16.6 seconds.

1957 also marked an engineering milestone: it was the first year an engine achieved one horsepower per cubic inch. This achievement was made in a 283 cubic inch V-8 available in the Bel Air and Corvette. Although extremely potent, the engine didn’t prove to be much of a sales success, since people were equally wary of the $484.25 price increase that came with the engine, and of attempting to work on a system they knew nothing about. The engine was also known for being difficult to start. Although it would have qualified as a muscle car, it just didn’t bring success, and passed by largely unknown. After 1959 Chevrolet only used the fuel injected (fuelie for short) engine in its Corvettes. No matter – with its great looks and manageable price, the ’57 Chevy was a huge success. With over 700,000 of them being sold, the 1957 Bel Air accounted for

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41 *Motor Trend* Vol. 61, Issue 1 Sept. 2009
nearly 50% of all Chevrolet sales that year. Americans had come to love the car, and were warming up to the idea of performance.

The end of the 50s marked a good time to look back in retrospect. Throughout the decade, families had grown, America had emerged from the Korean War intact, and things looked bright. Hot rods had become popular in the West; NASCAR (and bootlegging) had become popular in the South.\textsuperscript{42} The interstate system was being developed nationwide. Importantly for muscle car fans, the late 1950s had ushered in not only the era of the V-8, but also of \textit{marketing} performance. With lots of pre-teens out there taking in all the media they could, and plenty of them being fond of cars, the stage was almost set for the muscle car.

\textsuperscript{42} For a good article on how both NASCAR and bootlegging were connected, see Jim Donnelly “Still Runner” \textit{Hemmings Muscle Machines} (Vol.1, Issue 1, Oct. 2003)
CHAPTER SEVEN
THE EARLY 1960s – BIG BLOCK ENGINES AND RACING TO LURE BUYERS

Just as things were heating up in 1957 with the Hot One from Chevy rolling out to consumers in high numbers, pressure from lobbyists caused the government to question factory involvement in racing. After all, racing was seen by some as dangerous, unnecessary, and juvenile. At the least it was viewed as something to be watched by the average person, and not participated in by the average citizen. Pressure from people of this persuasion caused the Automobile Manufacturers Association (AMA) to place a voluntary ban on factory involvement in racing. The manufacturers hoped in this way to deflect government and watchdog group scrutiny. But this didn’t change the fact that people were, in fact, racing their stock cars more than ever before. Drag racing had become more and more popular (recall that 1957 was the first year of NHRA Nationals), and 1957 was also the year the NASCAR races at Daytona had caught more than just Southern recognition. NASCAR had been steadily growing in popularity since its development in 1948. In only its second year, NASCAR president Bill France instituted the rule that cars raced must resemble stock cars, a move that made the sport extremely popular. Also in 1957, the NHRA created what it called the “super stock” class for drag racing, where the cars raced had to have stock bodies. This class would become extremely popular, as people would take their daily driver, bring it to the track, put on a set of racing tires, open up the headers (these could have a side outlet installed that would be unscrewed to allow exhaust gas – and sometimes flames – to exit right behind the
front fender instead of going through the mufflers and out the back) and let their car run at its full potential.

A hot rod with exhaust manifolds that could be unbolted from the rest of the exhaust system to allow almost no backpressure on the engine for a drag race. This would also make the car insanely loud. Photo by William McKinney

The super stock class was also popular for spectators because it represented cars they could actually purchase. And in NASCAR, stock cars stripped down of any extra weight with built-up engines were the order of the day. If a kid was watching either event with his parent, and he saw Pontiacs winning for example, which type of car do you think he would try to get his dad to buy? And in the 1950s children had more influence over purchases than ever. Their parents had to grow up poor during the Depression and then fight the Second World War, and so they wanted their children to have the things they never did. At least it is not unreasonable to think the parents themselves might like
to enjoy the spoils of prosperity. A young man is more likely to put up his hard earned money on something that won races, rather than on a losing brand.

**Chevrolet and Pontiac Skirt the AMA Ban**

The factories were not totally oblivious to this idea. Of course they wanted their product to be appealing in all ways, including at the race track. So GM divisions, especially Chevrolet and Pontiac, two divisions that were enjoying sales based on their V-8 engines, paid lip service to the racing ban but in fact continued supporting the growing hobby. Chrysler would do the same. Ford was more restrained than the other two major automakers, sticking to the letter of the ban more so than their rivals. Ford had, and continues to have, more of an interest in making the car for everybody, instead of special performance machines. This would leave Ford a bit behind the other companies by the time the muscle car boom really took off.

Chevrolet was the first to up the ante in the newly kicked off performance wars. Already having successfully introduced the V-8 to the masses with the small block in the Bel Air, Chevrolet took the next step to catch Chrysler and ensure racing success by developing the first big block engine. Chevy’s first class of big blocks was called W-head engines, and they were aptly named because they physically took up more space in the engine bay of a car than the small blocks. The original W-head was 348 cubic inches and when topped with a 4 barrel carburetor it made 250 horsepower, but it had plenty of room to be bored out to even larger dimensions, as NASCAR crews were apt to do, to make even more power. Chevy offered a performance set up of the new engine with
three two barrel carburetors, a high lift cam, and 11:1 compression, allowing the 348 to make 315 horsepower. The single 4-barrel would require less tuning, and therefore be more practical for everyday driving, but if a person had intentions of taking their car to the strip, there was no question which choice to make. The big blocks were only offered in big cars, but the fact that they were unleashed upon the public in a time of a supposed ban on racing reveals Chevrolet’s intentions to cash in on its success at the track. In 1958 Chevrolet upped the compression ratio of its big block and pushed horsepower to 335. And so, Chevy had created one of the important parts of the muscle car puzzle, the big block. Soon both Chrysler and Ford would develop big block engines of their own.

Pontiac had enjoyed some racing success, and they were not about to allow their GM brethren over at Chevrolet steal it all away. In 1957 they introduced the Bonneville, a top of the line Pontiac that took its name directly from the most famous of the dry lake beds in Utah where land speed racing had become popular. Like Chevrolet, Pontiac had agreed not to sponsor racing in an official capacity, but they still wanted to cash in on the burgeoning marketing opportunity. In 1959, Pontiac would introduce one of its most famous marketing moves, when it created the “wide track” for its cars. The wide track was a trick of John DeLorean, where Pontiac increased axle length to push the wheels out farther than any other automaker. This would in theory allow the big cars to corner better. Marketing man and de facto “performance expert” Jim Wangers went to Daytona in 1960 to see how and if the new change was helping. While sitting in the stands he overheard the “local expert” talking to the people nearby. “Watch those Pontiacs when they go into the turns. See how they don’t lean, and how much more stable they are then
the rest of the cars? That’s because they got that Wide-Track. Their wheels are mounted further out than every other car out there. That’s what gives them that better grip in the turns!” the man said. Wangers had heard what he wanted to hear, and publicity for Pontiacs was focused on the Wide Track for the next couple of years. So Pontiac was already thumbling its nose at those who didn’t want factory involvement in racing in one way. They would also do it in another.

It turns out the Pontiac division was loaded with racing fans. Pontiac division general manager Semon “Bunkie” Knudsen was a racing enthusiast, as was his chief engineer Pete Estes, and it has already been established that the bright young engineer John DeLorean and young marketing expert Jim Wangers were as well. Each of these men knew much of Pontiac’s success in the 50s was due to its racing image, and they weren’t going to let that go to waste. In 1959 Knudsen formed a special engineering department within Pontiac called the “Super Duty Group.” The job of the Super Duty Group was to make heavy duty racing parts for Pontiac engines. They would create lightweight aluminum intakes that were designed to take the Tri-Power setup (3 two-barrel carbs), forged and strengthened crankshafts, high flow valves, and header exhaust manifolds. Because of the AMA ban, Pontiac couldn’t put these parts directly in their cars and sell them, but they could offer them for sale at their dealerships’ service departments. Knudsen said “If those guys want to be fools and withdraw from racing, let

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43 Jim Wangers p. 52
them. But I’ve got a car to save and I haven’t got time to be a gentleman. We’re going racing.”

There is no doubt the Special Duty parts were intended for racing. Everything the department made was designed to create more horsepower, and the parts were not covered under any type of warranty. The parts even carried the warning “for racing purposes only,” and it was no joke. The engines could run so hot they could melt the aluminum intakes, and so a cool down period was needed after trips down the drag strip at full throttle; and at idle, the solid lifters would pound the finish off the surface of the cams because of their increased size.

The guys at Pontiac were really making an end-run around the AMA ban, and everybody knew it. In 1960, Jim Wangers struck a deal with a local Pontiac dealership called Royal Pontiac, in Royal Oaks, Michigan. Pontiac would supply the Royal dealership with all of its high performance parts, and they would sell cars equipped with them, a relationship that would last through the muscle car era, and would be repeated with several other dealers like Yenko Chevrolet in Pennsylvania and Baldwin Motion in New York. In 1960, Wangers showed that he was more than just an interested guy making ads for cars; he was an enthusiast and driver! That year he won the Super Stock class at the NHRA Nationals in a Royal Pontiac equipped with Super Duty parts, running a blistering 13.89 second quarter-mile.

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44 Jim Wangers, p.55
45 Leffingwell and Holmstrom, p. 71
46 Jim Wangers p. 72
Pontiac had also been enjoying huge success on the NASCAR Grand National circuit. Thanks to the Wide Track and Super Duty parts, Pontiacs won 30 races in 1960,\(^\text{47}\) and claimed the manufacturer’s championship in 1961. It was no problem for a stock car crew to go buy Super Duty parts and put them right into their cars. That of course voided any warranty, but who cared, they were racing! Pontiac’s dominance in NASCAR led the sport to create a rule that would have a significant impact on the muscle car era. In 1961, NASCAR mandated that the cars raced must have the engine they bought from the factory. This meant Super Duty parts Pontiac sold were no longer eligible. Pontiac was therefore faced with a decision: either give up their dominance on the track, or figure out a way to get those parts into their cars. In 1962 Pontiac decided to make a 421 Super Duty engine available in the Catalina and Grand Prix as an option consumers could check off if they wanted.\(^\text{48}\) This meant the Super Duty parts were in fact being sold directly from Pontiac. The move helped Pontiacs capture another manufacturers’ championship in 1962, and it also marked the first time race car engines were actually possible to buy straight from a company. A line had been crossed.

Another advantage Pontiac would enjoy was that it didn’t have to develop a special big block from scratch like Chevrolet did. When it introduced its V-8 in 1955, it created a big engine block that had a tiny bore for the size of the engine block, coming in at just 287 cubic inches of displacement. Subsequently, as the years passed and more power was wanted, Pontiac would just take the same engine and drill out bigger holes. In

\(^{47}\) Leffingwell and Holmstrom p. 86
\(^{48}\) Leffingwell and Holmstrom p. 87
1956 the engine displaced 316 cubic inches; in 1957 it was 347; in 1958 it was upped to 370, and in 1959 the Pontiac engine hit 389 cubic inches, the size that would go on five years later to power the first muscle car. In 1959 Pontiac also drilled the block out to its maximum size of 421 cubic inches. The engine, which came in Catalinas, was the toughest on the street in 1960, and a common choice of drag racers.

In late 1961 Chevrolet came back in a big way with its famous 409 cubic inch “Turbo Thrust” engine. In its lowest output form, the 409 was good for 360 horsepower, and a cubic-inch-matching 409 foot-pounds of torque. The Impala car design featured an element that was quickly becoming standard in the automotive world, namely a very long trunk. The tires of the early 1960s did not advance technologically as quickly as the engines that were powering the big cars. Those torque monsters could quickly spin a set of bias-ply tires into nothing more than smoke. To add traction to the rear wheels, the cars needed extra weight in the rear, so the logical step was to extend the trunks out. Although tail fins had become rather passé by the 1960s, the extra length in the back had not. The fins moved to a more horizontal design rather than a vertical one in those model cars, and eventually they would fade away altogether. In 1961 a 409 equipped Impala took the win at the NHRA Winternationals in Pomona California. 1961 also marked the beginning of a special series of cars from Chevrolet, the “SS” (Super Sport) models. The Impala was the first car to be available as an SS. It included either the 348 or 409 engine, stiffer springs, bigger wheels and higher performance tires, power steering, and power

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49 *Muscle Car Confidential* author and former test driver Joe Oldham listed the 421 Catalina as the fastest car at the time, saying nothing else he went up against could beat it.

50 Personal conversation with Penske Camaro race car builder Ron Fournier
brakes. From then on, if a Chevrolet was an SS, everybody knew it meant business. The SS package would be offered in the future on the Chevelle, Camaro, Monte Carlo, and El Camino. The Impala was proving to be an extremely good seller for Chevrolet, selling over 490,000 models in its first year of 1961, and subsequently going on to sell over 700,000 models for 1962, and over 800,000 models each of the next three years, making it the most popular car in America, and one of the most recognizable nameplates ever.\(^{51}\) Chevrolet upped the horsepower of the 409 during those years, to 380 in 1962, and then again achieving the one horsepower per cubic inch when it produced a 409 horsepower version. The 409 would be produced through 1965.

The 409 was a force at the drag strip, but it didn’t stack up as well on the NASCAR circuit because its combustion chamber was inside the engine block instead of in the heads of the engine, making it get hot and therefore have less space for oxygen over the long runs of hundreds of miles. So even though Chevrolet wasn’t doing poorly in NASCAR, they were still coming in second to Pontiac. In that era of divisional rivalry, Chevy wasn’t pleased with that, so they developed a new big block engine in 1963. The new engine was a well-guarded secret, with Chevrolet putting up barriers at Daytona to keep journalists and other racing teams away from their latest effort. The engine displaced 427 cubic inches, which was the NASCAR mandated limit. Once again, the racing community was having an effect on what the automotive companies were building whether they wanted to admit it or not.

\(^{51}\) 348-409.com/production* *production numbers are close to accurate, but as always, they are not exactly known because of lost records, fire, skips in production, etc. This is why I chose not to use exact figures here. This applies to many cars unless they are on a “limited” or “special production” run.
MOPAR Fights Back

Chrysler was appalled. It was one thing for them to compete for horsepower with other high-priced cars like Cadillac, but with lowly Chevrolet? It was time to step up to the plate again for Mopar. The C-300 had been a big deal, opening up the realm of high horsepower, but the 409 was proving to be extremely popular. One of the nation’s hottest new rock bands, the Beach Boys, even made a hit song all about the engine, with lead singer Brian Wilson recording the revving sound of his friend’s big block engine right in his own driveway. With lyrics like “nothing can catch her, nothing can touch my 409,” coming out of speakers everywhere, it was time for Chrysler to develop something special.

In 1958, Chrysler developed a new engine block called the B-Block engine. It would go on to be known as the “wedge” engine because of its wedge-shaped combustion chambers rather than the former hemispherical ones. The new engine also slanted down at sharp angles, making it look deep and wedge shaped. To save money, Mopar produced the same engine blocks for all of its divisions – Chrysler, Dodge, Plymouth, and DeSoto, but it didn’t use the same bore or stroke to keep the divisions separate and distinct. The largest engine displacement was 361 cubic inches, and of course that went into the Chryslers. When equipped with two four-barrel carburetors, it made 320 horsepower, enough to stay ahead of Chevrolet at that time. It is worth mentioning that, like Chevrolet, Chrysler also attempted to make a fuel injected model, but, also like
Chevrolet, the idea was ahead of the technology of the day, and it proved to be finicky and a failure, with most people still opting for the tried-and-true carburetor.

In 1961, with the introduction of the 409 and its 360 horsepower, Chrysler knew it had to respond. They drilled out the wedge block to 413 cubic inches and put two carburetors on top, a setup that made 400 horsepower, a new high at the time. By 1962, Mopar had an even hotter version of the engine ready, made specifically for racing. Again, despite the supposed ban, the automakers were seeing how their bread was getting buttered and were not about to let that come to a halt. 1962 also marked the year Chrysler did something unusual. Even though they had high powered engines, they were still going into the biggest cars they had. Their weight was keeping them from winning drag races, and even though they could win at NASCAR events, they were still pricey. So in 1962 Mopar quietly slid its big engine into some smaller Plymouths Furys and Belevederes, creating what could have potentially been the first muscle cars had they had more contemporary styling and more promotion. But the cars were still being designed by Virgil Exner, and his flamboyant style that was so popular in the Fifties had become old looking by the Sixties, so sales did not really pick up with the public at large. But at the drag strip, Chrysler had returned to dominance.

1963: A Strange Year

Right in the middle of hot sales, and even hotter horsepower wars, GM suddenly instituted an internal ban on racing, and they meant business. There was to be no circumventing this rule, no Super Duty parts sold at Pontiac dealers, nothing. With wins
at Daytona; with wins at the drag strip, why would Chevrolet cut off its own leg? It turns out Uncle Sam was responsible. Were safety concerns the problem? What about emission worries? No, those dark clouds were still miles away. The problem was that GM was doing too well. In 1890 the U.S. had passed antitrust laws that disallowed monopolies. By 1962 GM already owned a 57% market share, and the government made it clear they didn’t want to see 60%.\textsuperscript{52} And after having used the antitrust laws to break apart Standard Oil in 1911, GM didn’t want to test the waters. But they didn’t want to ruin sales either. So the step they took to help deflect the eyes of the government was to simply stop involvement in racing. Chevrolet still hoped to make sales, but they would no longer be pushing their products as racing machines. Well, at least for a year.

Meanwhile over at Chrysler, there was no worry of government break-up. They still wanted to race and wanted to win. The Max Wedge was a big success at the drag strip, but like the Chevrolet 409, it just didn’t cut it on the NASCAR circuits. Chrysler president Lynn Townsend had two boys who loved performance cars, so he had an idea how important racing success was to young buyers. Townsend approached Bob Hoover, the head of Chrysler’s racing division, to see what could be done to improve NASCAR success. Hoover famously replied: “If you want to go there and go like stink, let’s adapt the Hemi head to the race B engine.”\textsuperscript{53} Although it took some special engineering, Chrysler’s engineers did the trick, and got the new 426 Hemi into the lineup. The engine was basically the nuclear bomb of V-8’s. Conservatively rated at 426 horsepower to help

\textsuperscript{52} Leffingwell and Holmstrom p. 90
\textsuperscript{53} Robert Genat, \textit{Hemi: The Ultimate American V-8} Crestline 2009
keep insurance rates from climbing even further through the stratosphere, the 426 Hemi made more like 500-plus horsepower straight from the factory. If there was ever a race car engine put directly into a car, this was it.

The new Hemi engine was a huge success at the track. In 1964, a young Richard Petty, who would later go on to be the “King” of the superspeedways, dominated the tracks in his Hemi-powered Plymouths. Petty would go on to win Daytona and eight other races that year, winning the Grand National Championship.

New NASCAR homologation rules stated that for a car to run with a particular engine, that engine must be put into at least five hundred street cars. This meant that the new Hemi, along with the biggest big blocks from Ford and Chevrolet, would be out on the streets, and John Q. Public could buy one if he knew where to find one and could cough up enough money. And so by 1964, Detroit was laden with some of its most stout material ever, all just waiting on some sexy new designs to be mounted into. The burgeoning youth market and car enthusiasts would soon have their dreams come true.

Where was Ford?

Ford also made some powerful cars in the early sixties, but they never achieved the success of their competitors. Robert McNamara had joined Ford as a manager of planning in 1946, right after the Second World War. He worked his way up through the ranks to become the first person not named Ford to take the presidency of the company. McNamara was not into the performance aspect of cars, instead focusing on building
cheaper, safer, more efficient or comfortable cars. He upheld the AMA ban on factory racing involvement, so Ford did not join in on the big V-8 movement going on in the late 1950s. In 1961, McNamara would become the Secretary of Defense for John F. Kennedy, a position he would hold through the Lyndon B. Johnson presidency. This move proved to be a disaster if you were a young man in the late 1960s, as it eventually meant you could end up in the jungles of Vietnam. But at the time, it was a good move for Ford’s performance outlook.

By 1961, Ford was a little behind in the performance wars. But that isn’t to say they didn’t have any success at all. Ford did have the Thunderbird, which was competitive with the Corvette, but not in a performance aspect. Yes, the T-Birds had V-8s but they were not as powerful as the Corvettes’, and the Thunderbirds were loaded with more comfort options. The idea was to attract older buyers who wanted “personal luxury” in a two-seater. But Fords were for the most part absent from the drag strip and NASCAR winner’s circles as Chrysler and GM battled it out in those arenas. Post McNamara, Ford did start to move in a more performance oriented direction, but it was behind its competition. Ford did put out a few sparse offerings that were intended to be race cars only, like the Thunderbolt, a 406 cubic inch car capable of 405 horsepower. Despite being stripped down, the car was still not a match for the Super Duty equipped Pontiacs, Max Wedge Chryslers, and 409 Chevys. Ultimately Ford’s main entry into the racing arena, the full size Galaxie, was just too big and heavy to compete with GM and Chrysler. When the muscle car era got started, Ford would find itself in the backseat, so
to speak, but they weren’t out of the game. In fact, thanks to a man named Lee Iacocca, Ford would wind up changing the rules by which the game was played.

In 1962 Iacocca convinced Henry Ford II, chairman of the board at Ford, that he needed to respond to the racing success being had over at GM. Ford contacted his counterparts at GM and complained that Pontiac and Chevrolet were violating the AMA ban on racing. General Motors corporate headquarters replied that the divisions were being operated by rogue management and they couldn’t stop them. An upset Ford responded with a letter letting GM know they would no longer be participating in the voluntary racing ban. Ford went on to sponsor racing at the highest available levels, including NHRA, NASCAR, and even sponsoring the winning driver of the Indy 500 with a Ford engine. Also at this time, Iacocca got two of his special assignment team members, Dan Frey and his assistant Hal Sperlich to begin work on a “special Ford Falcon.” The car was to be sporty, a “2+2” model (a car that technically had four seats but the rear seats would be small), weighing no more than 2,500 pounds and costing no more than $2,500. Their solution to these parameters would go on to be one of the most iconic American cars of all time.

And so the table had been set for the muscle car. In 1954 the V-8 had barely had an audience in US driveways; in 1955 the C-300 was making 300 horsepower, by 1957 the Bel Air had brought the V-8 to the masses, and by 1962 four-hundred horsepower was a reality for anybody with the funds to acquire it. The drag racing and horsepower wars had taken hold in Detroit, with Pontiac claiming the top spot in 1960, Chevrolet in
1961, and Chrysler in 1962. 1963 saw the introduction of real-deal racing engines into the consumer market. America’s love with buying fast cars was just heating up, and the explosive youth marked was about to be tapped.
CHAPTER EIGHT
DETROIT MAKES SMALL(ER) CARS

In the early 1960s, the car designers in Detroit were vaguely aware that youngsters were on their way into the showrooms, and the automakers wanted something “cool” to sell them. The thinking of the day was that a young person would want a small car, after all, they don’t have children of their own, and small cars would be more “European” looking and therefore perhaps more attractive to young people who didn’t want to be like their parents. But most of the earliest offerings from the Big Three were basically smaller versions of their standard cars with an important difference: the small cars didn’t share the V-8s of the big sedans. It is also important to keep in mind that about the only place foreign competition had any kind of foothold in America was in the compact segment. In that segment, the leading foreign car was the Volkswagen Beetle, with its small proportions and strange rear engine design. From 1958 to 1959, VW’s sales in the United States had nearly doubled. And so in a move to curtail foreign expansion and simultaneously entice younger buyers, the American automotive companies tried their hand at small (by American standards of the day) cars.

The first response to the small European cars by American companies came from the small-timers of Studebaker and American Motors Corporation (a corporation that had come into being by the merger of Hudson and Nash in 1954). AMC developed a small car called the Rambler, and it helped the company survive through the Sixties. Studebaker introduced its small car, the Lark, in 1959. The car came equipped with either a 170 cubic inch inline six, or 259 cubic inch V-8. Both engines were antiquated,
using the old flathead design that Studebaker had developed twenty years earlier in 1939. The V-8 offered the best performance, and while it was respectable, it wasn’t mind-bending, turning in 0-60 times in the ten second range. Plus the V-8s were mainly used in the four-door police package instead of the sportier-looking two-door versions. Sales were not bad for the little car in its first year, since Studebaker had struck deals with several of the Big Three that allowed it to sell its cars through their dealers. With virtually no competition, the little car found some homes. But once the Big Three started to make smaller cars of their own, sales dropped off for little Studebaker, despite the company finally updating its six cylinder to a more modern design that upped power from 90hp to 112hp despite no change in displacement.

Ford released the first small car from the Big Three. In the fall of 1959 (under Robert McNamara) Ford introduced its small car, the Falcon. Although the Falcon sold well (over 400,000 in its first year!), sales were mostly due to its economical pricing and not because it was anywhere close to something America’s youth salivated over. Many a
teenager would wind up behind the wheel of a Falcon over the next decade, only to long for something cooler.\textsuperscript{54}

Chevrolet was the next company to step up to the plate. In baseball, a “switch hitter” is someone who bats from both sides of the plate, and it turns out that is exactly what Chevrolet tried. In 1960 it sidestepped all of the traditional American car rules and “batted left-handed” when it produced the peculiar little Corvair. The Corvair was the smallest American car on the market, and even more distinctive was its engine. The Corvair had a rear-mounted, air-cooled engine, in the style of Volkswagen. The Corvair had a distinctive design shape, and it was a step in the right direction for the youth market. Youth of the day, my father included, thought the car “looked cool.” The car sold modestly well, but it was probably too far outside what Americans were comfortable with to have lasting power. And once Ralph Nader’s “Unsafe at Any Speed” hit the shelves, calling out the little Chevrolet as a danger to spin around at high speeds (something Chevrolet adamantly denied), the Corvair was doomed.

Chevrolet did not stop trying to make a small car with the Corvair though. “Batting” from the more traditional right-handed stance, the next small car tried by Chevrolet was the Chevy II. The Chevy II was a move back to the bread-and-butter for Chevrolet, whereas the Corvair had been an adventure into omelet territory. The only new innovation on the Chevy II was that it used a unitized-body design that incorporated the body with the frame rather than putting the body on top of a separate frame. The

\textsuperscript{54} My father was one of those poor youth, with a used Falcon being his first car. The poor thing cost him only $200 but it still wasn’t much of a bargain. With only a two speed transmission and an underpowered engine, the Falcon just didn’t get up and go much of anywhere.
Chevy II was a plain-looking, squarish Chevrolet that in its most souped-up form (the Nova 400) came equipped with a 194 cubic inch inline six that made 120 horsepower. That wasn’t all that bad for a car weighing in at just 2,600 pounds, but it couldn’t draw much performance attention its way when Corvettes and 409 Impalas shared the same car lot. The car would not receive a V-8 until it got the 283 cubic inch version in 1964, but by that time the Pontiac GTO was out, as was the Chevrolet Chevelle, and the Chevy II dropped in the sales charts.

Plymouth was also a player in the small car movement of the early 60s. Plymouth’s entry was called the Valiant, and a stylistically brave effort it was. The Valiant was instantly recognizable with its horizontal fins moving both forward and back along the side of the car.

The Valiant also sported a trapezoid shaped grill and had a spare tire bulge along the trunk lid. The hood area was able to be given a flattened look thanks to Plymouth’s
creative movement of the engine. The six cylinder engine that powered the Valiant was nothing particularly new, but the way it was oriented was. Plymouth’s engineers rotated the entire engine thirty degrees along its axis, making it possible to squeeze it under front fenders with a lower profile. The engine became known as the “slant six” and it would remain a tried-and-true engine in many Chrysler applications for years to come. In its original form, the six cylinder was good for 101 horsepower. If an aftermarket “Power Pack” was purchased and installed, the engine made 148hp. In 1961 Plymouth pushed base power to 145hp and the Power Pack to 195. These were respectable numbers, but no matter how it was sliced, the car lacked what was really cool in the 1960s, and that was a V-8. Plymouth continued to attempt to attract younger buyers by making a sporty version of the Valiant called the Barracuda. The Barracuda featured bucket seats and a fancy dash with a floor shifter, and many models offered a sloping fastback roof. While this helped sales somewhat, it still didn’t have the sought-after V-8. By the time Plymouth figured out they needed to put one in, it was too late, as the mighty GTO had erupted onto the scene, along with a new sporty entry from Ford, the Mustang.
CHAPTER NINE
THE MUSCLE CAR – YEAR BY YEAR

1964

General Motors

Finally, the moment of destiny arrived. DeLorean and his team found the magic combination the youth market was looking for. Young people wanted something small, sleek, stylish, and sexy. What good was a car if it didn’t attract girls? Basic transportation? Ha! And if the car was also capable of besting a young man’s buddies at the strip or local stoplight? Well, that was like putting bananas and pudding together: the perfect combination. This chapter will run through the gamut of muscle cars, from the first GTO to the last Super Duty Trans Am. Along the way, we will witness the back-and-forth fighting amongst brands, and witness as designs and styles changed quickly: not every five or six years as we have become accustomed to today, but yearly. What was going to be the next cool thing was anybody’s guess all throughout the era, but one thing was for sure, the prize for guessing correctly was huge. Magazine bragging rights, ogles from passers-by on the street, young men dreaming of driving your car, brand prestige… all of which of course translated into sales figures! Some of the cars from that era would go on to be all-time superstars, some of the most sought-after cars in the world today. And collectively the cars of the muscle car era would combine to make history of their own, defining a generation, and in the process helping to define America.
As has been mentioned, several cars fit most of the muscle car formula, but none had quite fit all the right pieces together at the right time. The Chrysler C-300 of the Fifties had sporty looks for its time and certainly had the engine-bay goods, but it was way out of the price range of most of the youth market. The Plymouth Fury could also be considered an attempt at making a muscle car, but its styling left it for dead. Instead, the car that is widely recognized as being the first muscle car is the Pontiac GTO.

The GTO was an option package for the Pontiac Tempest. The Tempest had been Pontiac’s entry into a smaller car market, but it had failed even more miserably than most of its brethren because of its pounding four cylinder (the engine was literally half of a common Pontiac V-8, and it was really oversized and unbalanced as a four cylinder). The result had left a lot of vibration, which Pontiac tried to conceal with an ill-fated idea. DeLorean felt he could reduce cabin vibration by making a “rope drive” drive shaft using steel wires instead of a solid metal shaft, thereby allowing for some give. The rope drive succeeded in keeping noise out of the cabin, but it wreaked havoc on the car’s rear end, basically destroying the gearing.\(^{55}\)

Pontiac needed something to get them back into the game after that disaster. Besides, what was GM’s self-proclaimed (and self-promoted) racing division doing pussy-footing around with four cylinders and rope drives? This was Pontiac! They needed something hot, something that could really move. It’s no wonder then that on that early spring day in 1963 it only took about 20 minutes for the conspirators of DeLorean,

\(^{55}\) Leffingwell and Holmstrom p. 114
Gee, and Collins to come to agreement on what they were going to do with Pontiac (GM racing ban be damned). It was almost like the words were echoing in their heads, “gentlemen, we’re going racing.” And so Pontiac produced what was going to be the hottest thing on the street in 1964, the GTO.

The 1964 GTO was a Tempest with several key differences. The most obvious change was under the hood, where instead of some four or six cylinder, or even the maximum 321 V-8 engine, sat a big block 389, putting out 325hp with the four barrel, or 348hp and 428 ft-lb of torque with the tri-carb setup. The GTO would also get special badging and cool dual exhaust tips.

Inside, the GTO looked upscale, with a fancy turned-metal dash that would have made Ralph Nader wince, and lots of cool gauges and instrumentation. And it all came together at a reasonable price of only $2,776. When GM heard of such subordination,
they wanted to keep the car hush-hush, so they agreed to allow Pontiac to limit the production to only the 5,000 they had pre-sold to dealers. But after word got out about the new car, orders came flooding in, and wouldn’t you know it, it turned out GM was gracious enough to allow Pontiac to squeeze out over 32,000 GTO’s by the end of 1964. Apparently money talks louder than the Justice Department. And recall the 32,000 cars were all on top of regular Tempest sales and with minimal advertising. As Wangers put it, “Truth was, we were taking Pontiac performance off the racetrack, like the Corporation wanted, and putting it on the street, like the Corporation didn’t want.”

It didn’t hurt Pontiac any that they got a gracious write-up from *Car and Driver* in its April 1964 issue. The magazine wanted to pit Pontiac’s new GTO (name brazenly stolen) against a world-class sports car, the Ferrari GTO (name original). Jim Wangers, advertising guru and car fanatic at Pontiac, had a trick up his sleeve. When it came time for the testing, Wangers had a 421 racing engine inserted into the GTO, giving it way more guts than it should have had. *Car and Driver* couldn’t get a Ferrari in for the comparison, so they had to rely on previous test data for that, but they did commission a painting of the two GTO’s racing on the cover in almost comic-book style. It turns out that was a good way to sell magazines, and it also turns out the little white lie of the 421 helped things along. The editors of *Car and Driver* were understandably blown away by the Pontiac, and they gushed over it in their article. When the publication was read across America, it had a very real impact. Average Joes could never afford a Ferrari, but if this hot new Pontiac could get similar results, then why not buy one? Plus, the car just

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56 Wangers, p. 99
plain looked good. It was an unarguable success for Pontiac, and the mystique of the GTO was born.

If Pontiac had just become the Cinderella of the ball, GM’s other divisions were left looking like the homely step-sisters. Pontiac had just put on the glass slipper, and Buick, Chevrolet, and Oldsmobile had to try something to get back in the dance. Fortunately for them, they had the blueprint for success with GM producing new “A-body” cars across the division. The A-body was the intermediate underpinning frame on which many GM cars would be built from 1964-1981, when a move was made to front-
wheel-drive. The new GTO was built on the A-body, so the other GM divisions would have a similar platform on which to attempt to make “GTO-esque” cars. Oldsmobile would be the first up.

Oldsmobile had formerly held the performance banner for GM when it had the Rocket 88 of the late 40s and early 50s, but somehow they had lost touch with younger buyers, instead slipping into plain-looking sedan territory, a move that kept average businessmen content, but didn’t stir any youthful imaginations. In 1961 Oldsmobile had tried to get into the small car market with its F-85 unibody car, with the top of the line model being named the Cutlass. The F-85 was very unsuccessful, being outsold by even the Studebaker Lark. So in 1964 Oldsmobile built a newly designed Cutlass on the A-body frame. The car was a step in the right direction for Olds, being a touch bigger than before. Oldsmobile wanted to compete with the GTO, so they offered what they called the 442, which was a V-8 with a four barrel carburetor, a four speed manual transmission, and posi-traction. The engine still met the GM regulations of no more than one cubic inch per 100 pounds of car. Coming in at 330 cubic inches, it was good for 290 horsepower. The car was popular, but not necessarily with the youngest buyers, instead becoming known as the “executive’s hot rod.” It would take some more engine work and body restyling before the 442 would be a hit with young buyers.

Chevrolet was the next GM brand to dabble in the intermediate performance market. Like Pontiac and Oldsmobile, Chevrolet was also putting out a new car based on

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57 Leffingwell and Holmstrom, p. 126
the A-body, the Chevelle. The styling of the Chevelle was popular and it would continue to be a huge hit for Chevrolet for a decade. Chevrolet wasn’t “all-in” on the idea of performance in intermediates in 1964, but thought it would test the waters. Chevrolet produced a dozen Chevelles that year with the Corvette 327 engine that was good for 365 horsepower. Those rare Chevelles were sold for $900 over the base sticker price and are an extremely rare (and valuable) find today. But they told Chevrolet that there was a willing market out there for performance in these types of cars, and the next year they would made a 350 horsepower version of the 327 a regular option for the Chevelle.

The GTO created such a craze that even Buick got into making muscle cars in 1964. Long known for making comfortable cars for doctors and other highly paid professionals, this was a major step for Buick. They also chose to use their A-body car, the Skylark, to make into their muscle platform. The car’s maximum engine choice was a 300 cubic inch V-8 good for 250 horsepower. This didn’t really wow too many people since the other heavy hitters were out on the streets, but it was evidence of the ripple effect the GTO was having across a wide spectrum in the auto industry.

Although all good attempts, the Oldsmobile, Chevrolet, and Buick just didn’t have the horsepower to compete with the big block Pontiac, and the GTO enjoyed top billing for the rest of the year within GM’s ranks. Ford, however, released something new and sexy mid-year that would change car design drastically.

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58 Leffingwell and Holmstrom, p. 128
Ford – The Mustang

Ford had to rely on sales of the Falcon as its way of getting young buyers into its showrooms. And for its first two years those sales had been strong. But in 1964, Robert McNamara, who had been the major force behind the Falcon and all of Ford’s “purely utilitarian” strategy, left the company to become John F. Kennedy’s Secretary of Defense. This would be both a great and terrible move for the youth of America: great because Mr. Boring himself was no longer in charge of designing Fords, but terrible because it would eventually mean an escalation of the conflict in Vietnam. The lives of many young Americans, for whom the muscle cars were intended, would come to an early end. But in 1964 the news was still on the good side, and things were especially looking up at Ford, where Lido “Lee” Iacocca had just been promoted to vice president and general manager of the Ford lineup.59

Iacocca had the idea that Ford could do better with the Falcon, and so he put together a special team within Ford called the “Fairlane Committee” to study future Ford automobiles. The team was concerned that Chevrolet had managed to double their Corvair sales just by making it a bit sportier with bucket seats and a four speed manual transmission and calling it a Monza. Team member Don Fey had been watching sales of the Corvair and noted, “I guess in desperation they put bucket seats in the thing, called it

59 Iacocca, always up to date on the times, would later create another very different but popular car segment, the minivan.
a Monza, and it started to sell. We got the idea that there must be something to it. And
that’s how it (the Mustang) all started, watching Monzas.”

Ford didn’t jump straight into the Mustang though. First, they copied the
Chevrolet idea and made a sportier Falcon with bucket seats and a four speed manual
called the Falcon Futura. The Futura, which débuted in 1961, came with a stronger inline
six than a standard Falcon, but it was just 101 horsepower, compared with the old 90hp.
That still wasn’t enough power in an era wanting more. So the next year, Ford
introduced its new 260 cubic-inch V-8 in the car, in a model called the Falcon Futura
Sprint. The 260 was the product of Ford’s new thin-wall casting, which allowed engine
blocks to take up less space (and add less weight) in the engine bays of cars. The Sprint
was a break with the old “McNamarian” philosophy of no frills, no fun, in favor of the
more “Iacoccaian” idea of making fun cars. McNamara had been in line with Henry Ford
II (nicknamed the “Duce”) who was in favor of making cheap, safe transportation, in the
style of Henry senior. Even though the Duce had taken Ford out of the AMA ban on
racing after being upset at Pontiac’s blatant disrespect of the ban, this was only in the
highest levels of competition, and Henry junior wasn’t too keen on the idea of making a
sporty car for the masses. Plus sales of the Futura Sprint hadn’t lit up the charts, so there
wasn’t much going for Frey and his team. They pitched the idea of the Mustang to the
executives at Ford five times, and each time it got shot down, since “everyone was afraid

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60 Mueller, Mustang 1964-1/2 – 1973, as quoted in The Muscle Car, p. 151
61 Ford had famously wanted to purchase a 50% stake in Ferrari in 1963, but Enzo Ferrari pulled the plug
on Henry Ford II at the last minute. Angry, Ford authorized his normally sedate company to build a
LeMans race car to beat Ferrari, which Ford did, building the GT40 and winning the famous 24 hour racing
event four years in a row.
of the Edsel,” Frey said. Ford Motors had a disaster the last time they had tried to think too much out of the box with a wild design, and they didn’t want that repeated, instead preferring to play it safe. According to Mustang historian Mike Mueller, Frey said:

“Each time I proposed it, Mr. Ford said no. Then, finally, the afternoon after the fifth meeting, we were in the design studio looking at some new proposals. Mr. Ford walked up behind me and whispered in my ear – I’m going to use, exactly, the same language he did – ‘Frey,’ he said, ‘I’m tired of your fucking car. I’m going to approve it this afternoon, and it’s your ass if it doesn’t sell.’ Of course it did sell. It sold and sold.”

Boy did it ever. The Mustang was released as a 1964 and ½ model, making for a unique start to a unique car. The car came out on April 17, 1964. By the end of that day alone, Ford had already sold over 22,000 of the new car! People absolutely loved it. By the end of 1964, Ford had sold 263,434 Mustangs, and by the next April (one full year of sales) 418,812 of the cars had been sold, an all-time Ford record. Iococca, Fey, and Ford had turned the automotive landscape on its ear, and everybody had to take notice.

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62 Mike Mueller, Mustang 1964-1/2 – 1973, as quoted in The Muscle Car, p. 155
The Mustang wasn’t a “muscle car” in the sense of the GTO. It was a smaller car, and it carried a smaller engine. Most Mustangs came with the Falcon’s 101 horsepower inline six. But you could also order the Sprint’s 260 V-8, good for 164hp, or the new D-code 289 cubic-inch mill good for 210hp. This was enough “gitty-up” to propel the lightweight Mustang into the realm of respectability. As if the car needed any extra appeal, a convertible Mustang was featured in the popular James Bond movie Goldfinger.

The Mustang had created a new sub-class of car, the so called “pony car.” A pony car is a type of car that may or may not be a muscle car depending on what engine
setup is installed. It will look sporty, and carry proportions of a long hood and a short trunk lid. The car must have front bucket seats and a smallish rear seat, keeping the car sporty yet practical. The pony car type of automobile has proven to be an iconic design that has gone on to be produced over and over. Following the Mustang’s success, many other challengers would rise up to battle the Mustang, but Ford’s commitment to low price and style would prove to keep the original pony car running longer than any other.

MOPAR

Chrysler also attempted to put out a pony car in 1964. Chrysler already had a small car, the Valiant. Constantly the “day late and a dollar short” member of the Big Three, Chrysler attempted to put a patch of sorts on an existing car, hoping it would equal success in the youth market. The fix was a variation of the Valiant called the Barracuda. The Barracuda shared the hood, headlamps, and front fenders of the Valiant, but the back was drastically different. The Barracuda was a two door fastback Valiant, usually (90%) equipped with a 273 cubic-inch V-8, good for 180hp (unlike the Mustang, which was usually sold in six cylinder form). The car had the largest rear window ever installed on a regular production car, at 14.4 cu. ft. Although beating it to market by two weeks, the Barracuda did not have the good looks or performance of the Mustang; in fact about the only advantage it did have was in cargo space, since the rear seats could be folded down in the fastback to offer class leading 23.7 cubic feet of room. But cargo space isn’t exactly what lights a fire under teenagers and young people, or else they’d be out buying

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64 Young, Tony Mighty Mopars 1960-1974
station wagons. The Barracuda failed to make a dent in Mustang sales, only selling about one for every eight Mustangs.  

1964 Barracuda. The car is basically a restyled Valiant with a huge back glass area and a V-8. It went on sale two weeks before the Mustang, but wasn’t nearly as sexy-looking or successful. Photo from 64cuda.com

On the power front, Chrysler continued to make and sell strong engines, but they were not put into any type of smaller, cooler car like the GTO. Instead they resided in automobiles like police interceptor Polara and the like. And so Chrysler found itself in the middle of a two-front war between the classic muscle car as newly defined by the GTO and the classic pony car as newly defined by the Mustang. And it was losing on both fronts.

1965

General Motors

As 1965 dawned, it was evident in Detroit that things had changed. If automakers had not realized there was a huge youth market before, they sure did now. And it seemed that the right formula for success had been discovered. Young people wanted smaller cars, but they didn’t want them to look like miniature versions of the big guys, and they

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65 According to allpar.com
didn’t want them to just be slow econoboxes either. Now it was just time for the dealers to put their company’s particular brand of elixir out there and see how the public liked it. It turns out if it was excessive, they loved it.

GM probably saw the majority of the big changes for the year. Chevrolet, Oldsmobile, and Buick had all seen what having a big block engine could do over at Pontiac with the GTO, and they wanted in on the action. This was not an era of share and share alike at GM. There was intense rivalry between the sister divisions, and each wanted to be the popular brand. They had begun to put pressure on corporate headquarters to relent on its size restrictions. Oddly enough, the success of the Mustang over at Ford had helped to alleviate some of the Justice Department’s monopoly concerns that had GM scared in 1963 and 1964. And so the company decided to allow engines up to 400 cubic inches to be allowed in intermediate automobiles. This was great news for Chevy, Buick, and Olds, and all three branches would launch their more serious rebuttals to the GTO in 1965.

Chevrolet continued its assault cautiously with the Chevelle. The model was enjoying some sales success, but its highest output engine was put in the SS model, which came with a 350hp 327 borrowed from Corvette. 6,021 Chevelles hit the streets this way, a much higher number than the dozen of a year before. But it was obvious that this was not enough to satisfy the youth of the mid-sixties. This generation wanted everything in excess, and despite the capable abilities of the small block 327, nothing short of a big block engine was going to do the trick.
Buick boosted up its engine choice in the Skylark Gran Sport in 1965 with its newest engine, coming in at just a hair over the stated limit at 401 cubic inches. Up 101 cubic inches from the previous year’s top power plant, the 401 was good for 75 more horsepower - 325 all told. That would normally be a whopping number, had not all the other GM brethren upped their outputs as well. While the Gran Sport may not have had the top horsepower ratings, it did have the torque bragging rights – a whopping 445 ft-lb. That meant if the owner of a ’65 Gran Sport Buick felt like slamming down the pedal, tires would be melting in a matter of seconds. That’s right, melting the tires off of a Buick.

Oldsmobile put the hammer to the anvil the hardest in an attempt to catch the “GreaT One,” as the GTO had come to be called. Oldsmobile reduced the bore of its 425 cubic-inch engine that it put into large sedans to 400 to meet the new criteria. Armed with 345 horsepower, the 442 Cutlass was now a monster to be reckoned with.

MOPAR

Chrysler was still trying to find the magic combination in 1965. They had all the horsepower in the world in the 426 Hemi, but it was really an engine intended for racing, and not for road use. The engine found its way in to just a handful of street cars, and those were bordering on the brink of being street-legal. Chrysler just wanted to sell a few so NASCAR would allow the engine to be run on its Grand National circuit. Most of the Hemi sales were in special order models purchased by people who wanted them for drag racing. The cars may have fiberglass or other lightweight parts, and may not be
particularly sturdy or the most reliable over many miles of stop-and-go traffic. A sticker inside the glove box of 426 cars even read “this car is equipped with a 426 cu. in. engine (and other special equipment). This car is intended for use in supervised acceleration trials and is not for highway or general passenger car use.” With so few Hemis out on the street, NASCAR accused Chrysler of not selling the requisite 500 engines as stated in their homologation rules. So in 1965, they were banned from running the Hemi on superspeedways. This move angered Chrysler so much that it took its ball and went to play someplace else, pulling all of its factory support from NASCAR. The move inadvertently made Ford the dominant force in NASCAR for the year, since GM still had not gotten back into official factory support of racing.66

The Barracuda was given some extra treatment in 1965 in an attempt to close the gap on the Mustang. The base engine was no longer the 170, but now the 225 slant six. The V-8 got more powerful as well. The car could be ordered with a “Commando” version of the 273 V-8, which topped the engine with a 4 barrel carburetor and put in a hotter camshaft with a higher compression ratio. This engine was good for 235 horsepower, which was slightly above the A-code 289 in the Mustang. An area where the Barracuda really outdid the Mustang was in handling. The Barracuda was already the more adept at sticking to the road, with a more sophisticated front suspension. But now a special “Formula S” version of the Barracuda could be ordered which included quicker steering (you didn’t have to turn the steering wheel as far to turn the front wheels), better transmission ratios, and performance shocks and springs. Unfortunately for Plymouth,  

66 Leffingwell and Holmstrom p. 133, 138
1965 was not a time when people were interested in handling and sports car driving. Muscle and sexiness were the names of the game, and the Barracuda didn’t offer up enough of the former to top the GTO or 442 from GM or enough of the latter to beat the Mustang.

And so Chrysler limped through 1965 still trying to catch up to GM and Ford. It had plenty of big-engine technology, but it didn’t have a sporty intermediate to put it in. The Barracuda had further removed itself from its Valiant roots, no longer carrying any Valiant symbols on the body (which it had in 1964), and it had increased in race worthiness, but it just couldn’t match the sex appeal of the Mustang.

**Ford**

The Mustang was a runaway success greater than anything Ford expected. The styling had proven to be popular with both the young men and women. Convertible Mustangs were especially popular choices, and why not? They made beautiful, yet inexpensive cars. As Leffingwell says “With the Mustang, Ford Motors had not just developed the perfect automobile for the emerging baby-boom market; it had developed the perfect automotive genre: the pony car. In its original form the pony car represented a fun, fast, sporty alternative to the hairy-chested muscle car typified by cars like Pontiac’s GTO.”

But why settle for just a part of the pie when you can move in on the whole thing? In a maneuver to cash in even more on the power hungry market being created by GM, Ford upped the strength of its 289 engines, making three different

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67 Leffingwell and Holmstrom p. 157, 160
versions. The D-code was still good for 210 horsepower, but there was a popular A-code, with 235hp, and a new K-code with solid lifters, which needed regular valve-lash adjustments, but was good for 271 horsepower - enough to accelerate the little Mustang to times similar to the big block boys over at GM.

![Mustang front fender with a "289" badge on it, representing the cubic inch value of the engine. Such ornamentation is common on muscle cars. The 289 was respectable as a pony car engine until Chevrolet unleashed its answer to the Mustang, the Camaro, with its 327 and 350 V-8 engines. Photo by William McKinney](image)

**1966**

**General Motors**

1966 was a busy year for most of the American automakers. New designs were introduced from GM, and plans were being made by all the automakers to try to get the
upper hand on the competition. Ford didn’t have to adjust too much, since the Mustang was selling so incredibly well. Even stodgy little American Motors started to make plans to get into the muscle car war.

Despite the Mustang’s success, General Motors was still “the” muscle car king in 1966. But even by that time, it knew it couldn’t sit on its laurels for too long, or its advantage would slip away. After all, Chrysler had powerful engines if they could ever figure out how to design a sexy car to put them in, and the Corvair wasn’t proving to be much competition for the Mustang. And so in 1966, the GM brands introduced new styling for their intermediate A-body cars. The resulting style would be less boxy and more of what came to be called “coke bottle” styling. The fenders over the front and rear wheels of the A-bodies were raised, giving the cars the semblance of a Coca-cola bottle turned on its side.

Every branch of GM used this design, except for Buick, which for some reason turned down the sides of its Gran Sport, making the car, well, pretty unattractive. The results were pretty unattractive too, as already slow Gran Sport sales slipped even more. Over at
Pontiac, the new GTO looked better than ever. The new design not only used coke-bottle styling, but also stacked the headlights on top of each other, making for an unmistakable front to the car. The GTO was still big and bad and wanted everybody to know it. If you were just a pretty boy you could get away with a Mustang, but if you were actually tough, you needed a GTO. 96,946 men decided the GTO was tough enough for them that year, proving the styling a success. The newly redesigned Chevelle also sold well, with the top of the line big block 396 SS model selling 72,272 on top of all other Chevelle production, which was sizeable itself. GM was still in the game as strong as ever.

1966 GTO. The car was restyled with an even more muscular look. Photo from highperformancepontiac.com
Plymouth, however, was still watching from the sidelines as weak as ever. Which was a shame, because they had the engine technology to really be blowing the lid off this whole muscle car thing. The styling just couldn’t come through. Plymouth decided to redesign the interior of the Barracuda in 1966, adding new gauges, and a better look inside the car. Always a bit more in tune with the demands of actually racing around a track, disc brakes were also offered as an option on the Barracuda (most muscle machines of the day were focused on going fast, not stopping). It wasn’t enough to overcome the looks of the thing though. When sitting beside a Mustang, there was no doubt which company had the prancing pony and which had the stinky fish. Plymouth management decided they were never going to catch the success of the ‘Stang with the Valiant-based design, and so in 1966 a green light was given to produce a pure pony car, but such a car would still be a few years off.

With the Mustang still soundly dominating it in the pony car arena, Chrysler tried to move in on GM’s intermediate crowd with a newly designed entry called the Dodge Charger. Engine choices for the car included two big blocks, the popular 383 with 425 ft-lb of torque, or the racecar-esque Hemi, which now actually sold in quantifiable numbers. The Charger was a fairly large two-door car, but it came out with styling that was still more of the early-Sixties look than 1966. Combine that with the fact that newly styled GM products were already on the street, and Chrysler had lost again, selling only 37,344.
FORD

It was a good thing Henry Ford developed the assembly line to quickly produce automobiles, because the way Mustangs were being bought, there was no other way Ford could have ever met the demand. Even with relatively few changes from the original model, in 1966 a truly incredible 607,568 Mustangs were sold. Why change a good thing?

A couple of other notable events happened in 1966. Pontiac was at that point being run by its new manager John DeLorean, father of the whole muscle car movement. DeLorean had wanted Pontiac to develop a two-seater sports car for some time, but top GM leadership had axed it because of its potential to cannibalize Corvette sales. DeLorean finally came to a not-so-friendly confrontation with Ed Cole, GM executive vice president. Cole finally, in desperation, told DeLorean he could take the newly planned Mustang-fighter, the Chevrolet Camaro, and make a car out of that. That wasn’t really what DeLorean had been dreaming of, but it was plain it would have to do.\(^\text{68}\) In that era of hot divisional rivalry, DeLorean didn’t want to just make some copy of what as called the “F-body” car and put Pontiac badges on it, but he only had a couple of months until the Camaro was due out (in late 1966 as a 1967 model), and the Camaro had been heavily hyped in an attempt to hopefully give potential Mustang buyers a reason to hold off on their purchase.\(^\text{69}\)

\(^{68}\) Gary Witzenburg *Firebird! America’s Premier Performance Car* as quoted in Leffingwell and Holmstrom p. 180
\(^{69}\) Leffingwell and Holmstrom
An early GM ad for the new Camaro, revealing only the front end with the “hideaway headlights” available on the RS (Rally Sport) model. This car also used the Chevrolet “SS” (Super Sport) emblem, which had gained credibility from the 409 Impala SS. A close look reveals “350” under the SS, signifying the new engine displacement going into the Camaro. The 350 would go on to be the most popular V-8 GM has ever offered. The Camaro was heavily hyped all of 1966 in attempts to possibly stall some potential Mustang buyers. Copyright General Motors.

Pontiac furiously set to work on the project, deciding to lower the car by one inch and add wider tires to their model, which gave the Firebird better handling characteristics and a different stance. They also wanted to add their own engines, which they did. But what really bothered DeLorean was that the F-body tended to “wheel-hop” under heavy
acceleration, due to its single-leaf rear suspension. This meant the car would sort of bounce and chirp the tires as the throttle was applied. Pontiac would end up creating a solution by mounting opposing-facing struts on opposite sides of the rear axle, but it wouldn’t be ready in time for the 1967 model, instead having to wait until 1968. Interestingly enough, Chevrolet also corrected the problem for 68 as well, but in a different way, using more leaf springs to help alleviate the annoying hops. The Firebird would turn out to be another success for Pontiac in the coming years.

Even little AMC started worrying about the muscle movement in 1966. The company had been scraping by on sales of its little car, the Rambler, for quite some time, but it appeared that time was about up. With the big companies making smaller cars, and especially with the cool and economical Mustang on the market, AMC knew it needed something to sell to young people besides an econobox. But the company didn’t have a proper V-8 to put into such a car, and so in 1968 they set out to construct such a device, not yet knowing exactly what it was going to go into.  

As we’ve seen, muscle cars have deep connections to racing, but yet another bond was formed in 1966 with the introduction of the Trans Am series of road racing. The SCCA (Sports Car Club of America) promoted a road racing circuit for cars considered to be “sedans.” There was an amateur class, and also a professional class that awarded prizes, including a manufacturer’s cup, to its winners.

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70 Leffingwell and Holmstrom p. 197
This circuit was the perfect place to showcase the new Mustang for Ford, but as it turned out, the Mustang wasn’t the best handling car. To help make a racecar for the SCCA circuit, Ford invited race car driver and LeMans champion Carroll Shelby onto their team to help make a race-worthy Mustang. Shelby did just that, creating a car with great racing potential. He took a stock Mustang and tightened up the front suspension using parts from Ford’s police force catalogue. His team then put in some rear traction bars that required cutting holes up through the floor into the back seat area. Big brakes from Ford’s station wagons were used as well, and then, to save weight, everything in the interior that wasn’t essential was removed. The glass in the windows was replaced with plexiglass to save weight, and the steel bumpers were replaced with fiberglass to do the same. The exhaust was run out of side pipes with no mufflers from the 289 high output engine, designed to make 350hp. The car was dubbed the “GT350,” not because of the engine power, but because that was the distance in feet from the conference room and the shop where they worked. Shelby and Mustang would form a long partnership, with Shelby Mustangs being capable of besting a lot of the competition on the road. Even today, Ford and Shelby have teamed up again to produce some of the highest-performing cars on the road.
The Trans Am series was extremely popular in the late Sixties and early Seventies, and the factories knew it. Parnelli Jones, who raced Mustangs for Ford, said “we had a lot of pressure on us to win on Sunday and sell on Monday. So we had wars out there, and it was quite exciting. When you look back on it in history, it means a great deal. The Trans Am series was very popular… they even have vintage races today.”\textsuperscript{71}

Eventually Chevrolet, Plymouth, Dodge, and even AMC would all produce special edition cars to run in the Trans Am circuit. The most famous of these was undoubtedly the Z-28 option on the Camaro, which would put in a high-revving 302 inch engine. Chevrolet would weigh in on its racing success with versions of the Z-28 Camaro in showrooms for decades to come.

\textsuperscript{71} Personal conversation Nov. 2009
An ad for a Chevrolet Z-28 showing the “nightmare” the Z-28 was causing the competition. When the Z-28 option debuted in 1968, it wasn’t advertised and went largely unknown. But after winning the Trans Am title in 1968, the Z-28 was hyped in 1969, and would continue to be a more race-worthy style of Camaro throughout the following decades. Copyright GM.

1967

1967 would see yet more escalation in the muscle car battles now raging in Detroit. More models were released on the rapidly crowding field, while others received refreshing. Amongst the maelstrom, a book titled Unsafe at any Speed was released, putting into text the fears of many about the auto industry.\(^\text{72}\) While the book made waves, it wasn’t on the mind of many young muscle car buyers that year. The pony car field was especially hot in 67, as GM finally launched its answer to the Mustang, and Plymouth finally allowed its Barracuda to break away from its stodgy Valiant roots.

\(^\text{72}\) Besides calling out the Corvair as unsafe, Nader’s book also specified other safety concerns. Bright dashboards would be discontinued after the book since they could reflect sunlight into the driver’s eyes. Automatic transmissions also had to be standardized into a P,N,R,D,L pattern. Before that time, they could differ from one automaker to the next, causing confusion. The book also influenced the government to make more collision tests mandatory, adding extra expense to each car…funds that meant that in the future car model designs would not change as rapidly as they did in the Fifties or Sixties. Today cars will run a particular design for 7-8 years, something unheard of at that time. Also, Nader called out the need for cleaner burning engines, stating that Los Angeles was becoming smog-infested from automobiles.
Let’s start with Plymouth. The Barracuda, for all of its handling and stopping abilities, just didn’t have the flashy and “with it” looks to bring in the youth audience. A redesign was just what the Barracuda needed, and in 1967 it got it. The Barracuda’s back wheels were no longer hidden under the rear quarter panels, and the car kept a flat front end, and a sloping rear glass that wasn’t quite as huge as before; the piece seemed to be designed to fit instead of being forced in. The big news was that a big engine was now available in the car. Plymouth engineers were able to cram a 383 big block engine into the narrow confines of the engine bay (although it meant no room for air conditioning, power steering, or power brakes). Although the engine made some serious horsepower in Chrysler’s bigger cars, it was restricted in the Barracuda because it had to use manifolds close to the fenders instead of having room for proper headers. The Barracuda also offered the two 273 V-8s to compliment the big 383. This meant the car could be ordered with 180, 235, or 280 horsepower. Would it be enough to catch the Mustang?

Restyled 1967 Barracuda left the rear wheel well area open. The car also upped its V-8 output. Picture from www.mrmopar.com/1967Barracuda
Plymouth wasn’t the only company taking aim at Mustang. The General (GM) was about to put out his newest troops in the field. After much internal debate, Chevrolet decided to name its pony car the Camaro (rather than the Panther, the other top choice – other choices included Chaparral, Wildcat, and Nova ). The word “Camaro” didn’t have any definition, but it was picked because it sounded sporty. When asked what “Camaro” meant by the press, Chevrolet product designers famously answered “a small vicious animal that eats Mustangs.” If you were a Mustang owner or Ford loyalist, “them’s fightin’ words!” And so began what has probably been the most historic and heated rivalry in all of automobiledom. The battle that began in 1967 would rage on for thirty-five unbroken years, spawning who knows how many park bench “races” (really arguments over which was better) and many impromptu races of the real sort as well. So what made the Camaro such a contender?

The media had been waiting for years to see what GM’s answer to the Mustang would be, because everybody knew they surely had to have one. The Corvair just wasn’t going to cut it, and its sales had been dropping steadily. Ralph Nader’s book had pretty much put a nail in the coffin of an already failing nameplate.

Like the Mustang, the Camaro didn’t launch any groundbreaking technology, but what it did do was look compact, sexy, and a bit more muscular than the Mustang. Whereas convertible six cylinder Mustangs could be thought of (and even advertised as)
“secretary cars”73 there was no such distinction with the Camaro. It was more compact than a traditional muscle car, but still looked tough. An early ad called it “A GT (Grand Touring) machine that thinks it’s a sports car.”

Copyright GM

In a style similar to the Mustang, the Camaro would be a 2+2 design, and would be offered as a hardtop or convertible. The engine choices for the Chevrolet were a base model 230 cubic inch V-6, the trusty 327 cubic inch 210 horsepower V-8, and an engine new for just the Camaro, the 350 cubic inch 295 horsepower V-8. The 350 would eventually go on to power more Chevrolet vehicles than any other V-8 engine the company ever produced. In 2002, Hot Rod called the 350 “the world’s most popular

73 One particular television ad showed a secretary looking at a Mustang in a showroom on her lunchbreak!
engine,” going on to say “there’s no denying that the ubiquitous 350 is the most versatile, most easy-to-build, best bang-for-the-buck engine on the planet.”

In 1967 many muscle car enthusiasts were about to find out what the 350 was all about by selecting an SS model Camaro. The 350 would prove to be a strong, but reliable engine, and would develop one of the largest caches of aftermarket parts on the planet. As has been mentioned earlier, about the only area of concern for the Camaro was the wheel-hop it experienced, a situation that would be corrected in year two. The Camaro was instantly popular, selling 220,906 in the first year, cutting down Mustang sales to 472,121… still twice the number of Camaros, but at least it wasn’t 600,000 for the Mustang alone.

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1967 Chevrolet Camaro convertible. The car continued GMs use of “Coke-bottle” styling. Chevrolet’s pony car answer to the Mustang set off a rivalry that has not subsided over the years. Photo from http://jmillsauto.com/images/Camaro%2006-29-2007%20008.jpg

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75 From www.camaro-registry.com
Another interesting event occurred simultaneously with the Camaro’s launch. It turns out that Chevrolet didn’t offer its biggest engine in the pony car, but some savvy dealers around the country thought it should, so they took it upon their own shoulders to produce such a car. The 427 was the hottest engine GM had, in its various forms of tune (375-500hp) powering its biggest vehicles, and also its NASCAR entries. GM had a program called Central Office Production Order (COPO). COPO was designed to allow dealers to order extra parts they needed, like special paint schemes for fleet vehicles, heavy duty seats for taxis, big brakes for ambulances and hearses, high performance parts for police forces, and replacement engines among other things. What if some risk-taking and innovative dealer wanted to make the car he thought Chevrolet should have been making? All he would have to do would be to order the car he wanted from Chevy, then order the engine he wanted through COPO. Some did just that, purchasing the 427 big block and putting it into the Camaro, creating some of the wildest, scariest muscle cars to ever roam American streets. There were only select dealerships across the country that tried this from 1967-1971, but the cars they produced were some of the meanest machines on the street, and they are currently some of the most valuable cars in America. The dealers included DANA in California, Nickey in Chicago, Baldwin-Motion in New York, and Yenko in Pennsylvania. Although the dealer-modified cars never accounted for a high percentage of Chevrolet sales, they did give the company credibility against the highest performance machines put out by Chrysler. The DANA ad read “Introducing…the DANA 427! Looks like a Camaro…drives like a Ferrari!”
This “WANTED” poster was an ad for Baldwin-Motion’s version of the 427 “Phase III” Camaro. The factory never put that engine in the Camaro, but some shrewd dealers around the country did, and sold them as new and (with warranty). This particular car has an advertised 500 horsepower, and was actually driven by Joe Oldham, author of Muscle Car Confidential. Oldham claimed the Camaro beat every car he raced to the point that he couldn’t find any challengers after a while. Copyright Baldwin-Motion Chevrolet
The Pontiac division was also enjoying success with its new F-body, the Firebird. The Firebird had the same basic shape as the Camaro, with a different front headlight and grill design, and different looking taillights as well. The Firebird did offer different engines though. The base engine was a Pontiac 230 inline six equipped with a one barrel carburetor that was good for 165 horsepower. The six cylinder could also be ordered in the Pontiac Firebird Sprint, which gave the engine a four barrel and overhead cam with higher compression and bigger valves and exhaust. Applying all these “hot-rodder” type tricks gave the engine 215 horsepower. This model of engine had been particularly designed to go into Pontiac’s two-seater sports car, since inline sixes were the type of engine used in the sporty Jaguars of the day, the cars DeLorean had wanted to target. But of course the two-seater Pontiac never happened\textsuperscript{76}, and so the engine was attempted to be put to use in the Firebird. But in the late Sixties there was no other choice of engine to have except the biggest one you could afford, and the Firebird made its reputation with its (conservatively rated) 325 horsepower, 400 cubic inch engine. Having the biggest block allowed by GM was a good way to draw attention to your small car, and Pontiac sold over 80,000 units despite not going on sale until February of 1967 (usually new models would hit the dealer lots in October or November of the preceding year).

\textsuperscript{76} Never happened in the classic muscle era anyway. Interestingly, Pontiac did finally produce some two-seater models, the Fiero in the 1980s and the Solstice in the 2000s. Both cars have niche followings.
1967 Pontiac Firebird. Note hood scoops, which could be opened to allow cooler, more dense air into the engine bay. After the Firebird, systems such as this would become staples of muscle cars. Photo used freely from Wikimedia Commons

It is good to point out that GM leadership was not crazy about allowing the 400 into the Firebird, preferring to limit the V-8 option to the division’s 326 models, but in the era of big engine = big sales, the large block was allowed to stay. But not without a fight, and a little more twisting of the rules by Pontiac. GM had dropped its one cubic inch per ten pounds rule, and changed it to one horsepower per every ten pounds. Also, the tri-carb setup in the old GTOs were not allowed either (under pressure from safety advocates and newly from insurance companies who wanted to raise rates for such equipment). And so Pontiac was forced to detune its 400 for the Firebird from its GTO form. Pontiac did this by: 1 – lying (not a new tactic for Pontiac…see AMA ban, Car and Driver test, GTO engine size, etc) about the horsepower output, and 2 – putting a tab on the carburetor linkage that would keep it from opening fully (anybody tinkering under the hood saw they needed to take it off, which they did, instantly adding horsepower).

The GTO would also start another popular muscle car trend: the air intake system. On the GTO it was called the Ram Air setup, and was a different hood piece that had open louvers in it where the original hood had closed ones. When that system was put on the hood of a car, it allowed fresh, cool (more dense) air into the carburetors, allowing more power to be made. The system came in the trunk of the cars, and had instructions not to
be used in the rain. The rogues at Pontiac seemed to always find a way around whatever was thrown at them.\textsuperscript{77}

Back to Chrysler now, where the Barracuda wasn’t the only thing they had going in 1967. That year also saw a couple of new entries into the muscle car market, the Dodge Coronet\textsuperscript{78} and Plymouth GTX, both attempts to get a GTO-like hit. The cars came with the newly available 440 cubic inch engine, which had been previously reserved for only Chrysler’s biggest sedans. Although the cars were handsome, they were not “cool” enough to compete strongly against the very crowded field of muscle cars out for public consumption.

\textbf{Ford}

Despite the huge success of the Mustang, Ford Motor Company launched yet another pony car in 1967, this time from sister division Mercury. Mercurys had been raced in NASCAR in years past, so it was not a stretch to see why they wanted in with a performance model of their own. The car they ultimately came out with was the Mercury Cougar. The Cougar was built on the same platform as the Mustang, but it was marketed in a different way. Costing more than the more pedestrian ‘Stang, the Cougar was to be an attempt to make an “upscale” type of Mustang aimed at an older, more mature audience. With so much of the youth market already locked-up with the Mustang, a decision to move towards an older demographic seemed logical. Cougars were stylish

\textsuperscript{77} Leffingwell and Holmstrom, p. 194  
\textsuperscript{78} The Coronet name had been used previously by Dodge, but only on large cars. This was a move to make the Coronet a mid-size car capable of competing in the muscle car market.
and their design has held up over the test of time, but in the muscle era of the late Sixties, they were usually a bit too heavy and underpowered to be considered real stoplight threats.

Mercury Cougar, cousin to Ford Mustang. Photo by William McKinney

1968

If it seemed like 1967 was crazy, 1968 was even more intense, as all the automakers marked ‘68 as a big year. Ford would finally produce a true intermediate-sized muscle car, Chrysler would finally get some of its bigger car’s styling right, GM would redesign it’s ever popular A-bodies yet again, and AMC would finally insert its entry into the pony car field. Gas was cheap, rock n’ roll was in full swing, and most everything seemed cheerful. Johnny Cash recorded the rebellious “Live at Folsom Prison” album and plenty of “rebellious” youth were getting themselves behind the wheels of their favorite makes of cars. But all was not well with the youth market, and as the Tet Offensive was getting started in Vietnam, many young men were being sent to the jungles of Southeast Asia. 1968 was also the year the famous execution picture was
taken in Vietnam, suddenly polarizing many of the youth of America and making them more interested in political action than automobiles. But one good thing about a baby boom is that there are plenty of people to go around, and the automakers took full advantage of the opportunity while they could. 1968 would also be the first year of several standard safety devices (perhaps as a result of pressure from *Unsafe at any Speed*?). Those would include collapsible steering column, and front and rear side running lights.79

**General Motors**

For 1968, General Motors redesigned it’s A-body design, making the wheelbase shorter. The cars generally took the proportions of a longer hood and shorter rear deck, in essence making them look more like large pony cars than traditional muscle cars. The move proved to be popular, with Chevelles and 442’s from this era being some of the most popular and enduring of cars of their type. The A-body cars of 1968 also had more of a sloped back roof and rear glass that extended at a low grade of descent towards the trunk, rather than the previous years’ more chopped look. Engine-wise, GM still enforced its “nothing over 400 cubic inch” rule, keeping its top big blocks the Chevrolet 396 and the Pontiac 400. This rule was about to catch up with GM, as Chrysler, who had always had strong engines and who was not afraid to put them into whatever cars they could, finally designed some sheet metal that was appealing.

79 Those lights are a good way to distinguish a ‘68 model from a similar looking ‘67 model on many cars.
For the time being, however, the GTO was still the muscle car king, and in 1968 it underwent a very “futuristic” styling change, as it became the first car to offer a bumper other than the normal chrome-plated steel bumper. The new GTO had a urethane front bumper called an “endura” bumper. This bumper would be colored the same color as the car, and many people thought it was wild and cool at the time. The car was named the *Motor Trend* Car of the Year, proving that muscle cars had made it into the American mainstream.

1968 Pontiac GTO with a new “Endura” front bumper, a wild departure from the traditional chrome bumpers, the GTO bumper was body-colored…a trend all automakers would eventually copy. Photo from pontiacserver.com

Oldsmobile was a division not known for stepping outside the lines. It had followed suit when the GTO came out, making the 442, but it stuck to the rules the whole time, not allowing its bigger engine in the car until GM said it was okay. But in 1968 it made a deal to let its wild side out while still sort-of playing within the rules. That year, the company teamed up with performance supplier Hurst, a company that had become
well known for their gear shifters (every cool kid with a muscle car had to have a Hurst shifter to go in it). Hurst would produce a run of 442s called Hurst/Olds models. The cars would come with bright gold and black paint schemes, and they would deliver something else you couldn’t get from an Oldsmobile dealership… the company’s 455 cubic inch, 390 horsepower, 500 ft-lb of torque engine. The 455 was only available as an option in Oldsmobile’s biggest cars, and under GM rules not allowed in the intermediate A-bodies. Well, Oldsmobile fixed this problem by selling 500 442s to Hurst, along with 500 455 engines. Hurst then took the original engines out of the 442s and sold them back to Oldsmobile to put in other cars, while they installed the 455s. Because of this little behind the scenes move, it was possible to get the biggest big block from GM in an Oldsmobile. Demand was high, but Hurst didn’t have efficient assembly lines to put in the engines, so 500 were the most they could produce.

At Cheverolet, 1968 was a big year. The Impala, one of the most popular cars in America, got Chevrolet’s 427 engine as an option. This engine was the hottest one Chevy offered, and it was desired in other cars besides the huge Impala, but Chevrolet wouldn’t allow it. On the other end of the spectrum, Chevrolet produced another entry into the small car market, the Nova. The Nova replaced the Chevy II as Chevrolet’s small economy car, but the Nova had a long option list of engines, and could be ordered as a two-door model. If the correct number of doors and the biggest engine were ordered in conjunction with one another, a person could get their hands on a more plain-looking, but inexpensive muscle car.
The Camaro and Firebird got minor restyles for 1968, including taking off the front angle window vents in favor of a nice feature called “Astro-ventilation,” a system that channeled cool air from outside onto the front passenger’s feet. The Camaro was marketed as the “hugger” for the way in which it hugged the road, and one of the popular Camaro colors would later be dubbed “Hugger Orange.” The Camaro was often pictured with its Chevrolet stablemate, the Corvette, and sometimes even called its “cousin” in ad type. The idea was obvious… the Corvette had built a strong reputation since its introduction in 1953, but it (and the insurance that it required) was always expensive. As an alternative, why not get a Camaro? It was practically the same car after all! Option lists for the car were extensive, and personal style often came out in the way a car was ordered.

Ad for a Z-28 Camaro calling it the “Closest thing to a Corvette yet.” Copyright GM
Another Chevrolet ad, promoting the Camaro along with the Corvette. By calling them “hugging cousins” they were playing to the “Hugger” ad strategy promoting how well these cars “hugged” the road. Copyright GM

Ford

In 1968 Ford hired Bunkie Knudsen away from General Motors. Knudsen had been working for GM for years, and had moved up the ranks (his father had once been CEO). After being passed over for that spot at GM, Knudsen took the job at Ford instead. Knudsen brought more of a muscle car attitude to Ford, as well as a “take-charge” charisma. After several years of sitting back and enjoying the success of the Mustang, Knudsen and Ford decided to make a move in 1968. Perhaps as a foreshadowing of the cars to come, the Mustang grew in 1968, allowing more space inside, but more importantly allowing more space in the engine bay. With the added space came the availability of Ford’s 390 V-8, turning the once “sporty” pony car into a real-deal muscle car.

Leffingwell and Holmstrom p. 266
But Ford didn’t stop with the Mustang. In 1968 Ford finally brought out its answer to the muscle cars of GM and Chrysler when it introduced the Torino. The car shared some of its parts with the Fairlane, which Ford was in the process of phasing out, since the nameplate had become sort of boring and outdated. The Torino was designed to not only serve as a replacement to the Fairlane, but, perhaps more importantly, to win NASCAR races. By 1968, engines had been engineered about as well as they could be without the assistance of computer controlled elements or fuel injection. So the way to gain an advantage in racing wasn’t any longer focused on the engines of the cars, but rather on and element that had heretofore largely been overlooked: aerodynamics. Ford intentionally made the Torino shape, with its long body and long slope-backed roof (sort of reminiscent of an early Sixties Impala fastback or Barracuda) in such a way so that air would flow over it in a non-turbulent way at NASCAR-type high speeds. With this newfound advantage, Ford racers did well in 1968, winning 23 races. In fact, if it weren’t for one of the sports greatest drivers, Richard Petty, and his Hemi powered race cars, Ford would probably have dominated the series (Chevrolet only won one of the 49 races that year).\(^\text{81}\) Once the arena of Pontiacs, NASCAR was now a two company race between Plymouth and Ford.

\(^{81}\) From the webpage http://www.racing-reference.info/raceyear?s=8&yr=1968&series=W
Because of the NASCAR homologation rules, Ford had to sell some version of its NASCAR engines in showrooms. Knudson made sure the new 428 Cobra Jet engine would become an option in the Torino, which was great news for serious gear heads (although it is unclear if any made it out of the factory with the 428 until 1969).

**MOPAR**

Chrysler finally came out of its shell in 1968, catching the other companies by surprise as they became an overnight success in the muscle game. The biggest reason was styling. In 1968 Chrysler put out a very handsome Charger (think Dukes of Hazzard) that struck a chord with the buying public. On the beauty of the new car, Charger sales skyrocketed to close to 100,000 units, all of which had the goods to go fast: no wimpy six cylinders here. The bottom engine choice was the reliable 318 V-8. One Dodge ad wrote, “This is no dream car. It's a real ‘take-me-home-and-let’s stir-things-up-a-bit’ automobile.” And they were right. In fact, not many people even chose the 318, most (75,000) opted for the 383, and the rest were divided between the 318, the 440, and
around 500 buyers selected the 426 Hemi. In a shocking move, Chargers had outsold the mighty GTO, Car of the Year award and all.

And why not? Plymouth had already created a hit with yet another muscle car, the Roadrunner. Named after the Warner Brother’s cartoon character, the Roadrunner was created as a bare-bones, inexpensive muscle car. The car came with the famous cartoon character as emblems on the car, and even had a horn tuned to reproduce the famous “beep, beep” of the quick bird. And the car backed it up with the goods to go fast. It may not have had any luxuries, but the car did have what mattered most, a choice of any engine Chrysler produced. 44,595 Roadrunners were sold in 1968, including an amazing 1,100 Hemi cars, which was half of all Hemis sold that year, and twice the number of Hemis sold the year before. Dodge capitalized on the Roadrunner success of its Plymouth cousin, creating a cartoonish character of its own to go on a car it called the “Super Bee,” a play on the name of the B-body car lineup. Cartoon characters on insane designs with wild paint schemes… it was truly a year of excesses for Chrysler, but it was a time of excess for Americans in general, and the public were loving it.

In 1968 a movie came out called “Bullitt.” The movie starred a handsome young actor named Steve McQueen. In what is perhaps the most famous chase scenes in movie history, McQueen in his 1968 Mustang GT is chased through the streets of San Francisco by two mysterious men in their 1968 Dodge Charger. The thrilling chase lasts approximately 10 minutes and even goes outside of the city. In what appears as comical to us today, a clip during the chase shows one of the men in the Charger fastening his (lap
only) seatbelt, signifying that they are about to do some serious driving. The scene helps show just how much a part of America muscle cars had become by 1968, but also shows, with the belt, that safety regulations were also starting to become a concern.

1969

MOPAR vs. Ford on the NASCAR Circuit

Chrysler kept going strong in 1969, producing an even more potent version on its 440, this one topped with three two-barrel carburetors, a setup called officially called A12, but unofficially called the “6 pack.” Still riding high on its 1968 success, the B-body muscle cars from Chrysler kept selling well. They finally made a good product, and, like Ford with the Mustang, they didn’t want to change it.

There was also a NASCAR edition of the Charger, called the Charger 500. Learning a lesson in the importance of aerodynamics from Ford, Chrysler made the Charger 500 to have a grill flush with the front of the car, and the windshield was flush as well. Also, the rear windows didn’t have the stylish outthrust pillars, because even though they looked good, they played havoc with air flowing over the car at high speeds. These changes all helped the Charger achieve higher speeds on NASCAR tracks, but as chance would have it, Ford increased its aerodynamic studies and produced two cars, the Ford Talladega and Mercury Cyclone that were even more aerodynamic and could make even higher speeds than the Charger 500.
That upset Chrysler. How dare Ford try to come in and take the Grand National Championships from them? They owned the mighty Hemi after all… and they didn’t like to lose. Chrysler, in retaliation, pulled out the atomic bomb of supercars. Designed specifically to teach Ford who was boss at NASCAR tracks, Chrysler engineers created what were undoubtedly the wildest looking cars of the muscle era when they made the Dodge Daytona and Plymouth Superbird. The cars used the basic Charger body, but then made some very obvious modifications. First of all, there was a nosecone over the front of the car, making it look quite rocket-like. The engineers were able to draw enough air from scoops under the car to keep the engine cool even with the front grill blocked by the nosecone. Then there was the massive rear spoiler, reaching nearly a full two feet up off the rear deck. Although one foot would have done the job of angling airflow to keep the rear of the car stabilized at high speeds, two feet were chosen so the trunk could still be opened, since “stock” meant “stock” and in order to race the cars they would actually have to be available to buy at dealerships.

Dodge Daytona. Imagine seeing something like this on a dealer lot today. Photo from stockmopar.com

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82 Leffingwell and Holmstrom p. 325
Chrysler stuffed its racing Hemi into the cars and went to town on Ford at the racetracks. Buddy Baker became the first driver in NASCAR history to break the 200 mph mark on March 24, 1970 at Talladega, driving a Dodge Challenger Daytona, and some of the cars would eventually be test-clocked at over 250mph! So equipped, the Chrysler cars won 38 of 48 NASCAR races that year (although ironically not Daytona). The only problem, and it was a major one, was how to keep tires from shredding at high speeds. Even modern tires can shred, as they did on a Ferrari in a recent *Motor Trend* test drive – and those were high-dollar Pirelli tires. In 1968 tires were not very advanced, and the ensuing blowouts in Superbirds and Daytona5s were some of the scariest, most dangerous crashes in NASCAR history. Taking that into account, along with Chrysler’s dominance at the track, NASCAR disallowed winged cars the following year, but Chrysler had proven its point. NASCAR success was great, but the truly amazing thing was how the cars, wild as they were with their nosecones, big wings and crazy graphics, were actually selling on dealer lots. It is a telling story of the wild year 1969 was.

Dodge also continued a strategy tried by Oldsmobile and then AMC, when it teamed up with Hurst to promote one of its better known but less potent cars, the Dart. Hurst made the Dart into the “Dart DTS” by giving it a four barrel 440 cubic inch engine. In that relatively small car, that engine could still produce some great drag strip times! Similar to the Chevrolet Nova, the Dart DTS was a good “sleeper” car, one that is fast without attracting much unwanted attention.

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83 From the website http://www.conceptcarz.com/vehicle/z9079/Dodge-Daytona-Charger-NASCAR.aspx
84 Interestingly, the modern NASCAR “car of tomorrow,” which is now run on most tracks, does use spoilers.
American Motors

AMC was still trying to push its Javelin in the car market, and trying to create a performance image, where it largely had none. Towards this end, AMC did the same thing Oldsmobile was doing, and teamed up with Hurst to try and make some attention-getting performance cars. Oddly, AMC chose the little Rambler to make its statement. The Rambler had kept AMC going through the sixties, always promoting its fuel economy and low price. But in the Sixties people were not very concerned about fuel economy. Gas was both cheap and plentiful. So AMC went in the opposite direction, getting Hurst to hop up its little car with its 390 cubic inch, 315 horsepower engine. The cars came with what may have been the most noticeable (and polarizing) paint of any car of the Sixties, being painted (in true American style) red, white, and blue. Only 500 were produced in 1969, and 500 for each of the next two years. These cars may have not been the hottest cars in America at the time, but their performance was considerable, and they paved the way for the more modern sports compact market. Perhaps surprisingly, many modern publications list the Hurst/Rambler as one of their top muscle cars.

AMC used a very noticeable red, white, and blue paint scheme on its special cars. This particular Javelin was used in the Trans Am circuit. Photo by William McKinney

85 A market that today is dominated by cars like the Mazdaspeed 3 and Volkswagen GTI
86 Hemmings Muscle Machines and Muscle Car Milestones both paid homage to the little AMC.
General Motors

In 1969, sales dipped across the board for the automakers and their muscle cars, but they dropped more so at GM. This can be attributed slightly to the recession that began in December of 1969, but it is more likely due to the export of troops to Vietnam (many sold their cars before leaving) and, in GM’s case, the fact that other car companies were unafraid to supply their biggest engines in their muscle cars while GM would not.

But GM still had strong success in some areas. A new version of the 442, the W-30, was introduced, and it sold well, to the tune of 33,607 models. The W-30 had a lightweight plastic hood, an air induction system, a beefed-up suspension, a hotter cam, higher compression, a big carburetor, and a 400 cubic inch 360hp engine. The Camaro sold even better than it had in 1967 or 1968, with a one-year only model for 1969. The redesigned Camaro was one of the most iconic cars of the classic muscle car era, and cues from it were even taken for the most recent 2010 version of the car. The car was normally advertised with the Corvette, a sign that it was strong enough to be considered close to Vette standards. The ads also focused on the car’s handling abilities, something usually left out of Ford or Chrysler ads. They called the car the “hugger” in their ads, even introducing a popular color to go with it, “Hugger orange,” which looks almost exactly like Clemson orange.

The car that started this whole muscle movement, the GTO, needed some freshening up. DeLorean wanted something that could compete with the success of

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87 “Hockey stripes” can be ordered on the new car. It also has the 1969-look of a cowl-induction hood, and it also has a similar look around the rear wheels.
Chrysler’s B-body cars, so he got together with Jim Wangers to see what his advertising group could come up with. Their old Tiger ads had worked in the mid-Sixties, but now something new was needed to keep the edge the GTO once had. Wangers and his committee came up with a concept called the “E/T,” a car that would have a hot version of the 350 but still be affordable, like the Plymouth Roadrunner. But DeLorean was not won over. Wangers described the situation:

During our one-hour delivery, he sat stone-faced, not saying a word and never changing expression. At the conclusion, he looked at us all and said, very coolly, “Over my dead body. Don’t you guys know this is a 400 cubic inch world? As long as I have anything to say about it, there will never be a GTO with anything less than a 400 cubic inch engine. I recognize what you are trying to do, and I support the concept, but get that 350 out of that car!” He had our attention, to say the least. He concluded his statement: “Bring this car up to GTO standards and then we’ll figure out how to cut the price.”

And so the committee began the process of adding equipment and extra options that took the new optional GTO from the lowest priced GTO to the highest priced one. The car came equipped with the Ram Air III induction system, rated at 366hp, and the optional Ram Air IV was available, underrated at 370hp. This was more to DeLorean’s liking.

Clearly he was more pleased with this new GTO concept. “All right guys, I’ll buy the car.” His smile broadened (as did ours). “But, let’s forget about that silly name (E/T).” Oh no, I thought, another DeLorean bombshell! “Every time I turn on the TV these days,” DeLorean continued, “I hear this funny guy shouting, “Here comes da Judge, Here comes da Judge!” So let’s give them their damn Judge!” DeLorean, like many other people in late-1960s America, was a big fan of the popular

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88 The “Tiger” GTO ad campaign is still one of its best known and remembered.
89 E/T stands for “elapsed time,” a term commonly used at drag strips. According to Jim Wangers, the prototype 350 GTOs could beat the 383 Road Runners 0-60 and quarter mile times.
90 Wangers, p. 184
NBC-TV show *Rowan and Martin's Laugh-In*. From that moment on, our new car was “The Judge.”

The first GTO Judge models were available only “Carousel Red,” which happened to be exactly the same color as “Hugger Orange.” The Judge also came with some cartoony-looking stripes and wording spelling out “The Judge” on its front fenders. In his book *Muscle Car Confidential*, author and former magazine test driver Joe Oldham talked about his first time seeing The Judge. Oldham had been contacted by Jim Wangers to see if he would like to come try out a new version of the GTO. Having driven cars prepped by Wangers before, Oldham was happy to oblige. He was shocked to be greeted by a very orange, very different-looking GTO than he was used to. Oldham thought the styling was a huge mistake, but he was wrong. When he took the car to the local drive-in, it drew the biggest crowd of any car he had ever test-driven!

The Judge was what Wangers described as “hype on hype.” The original GTO was built to hype the LeMans, and now The Judge was built to hype the GTO. Perhaps the Judge idea worked too well. Pontiac had trouble filling all the orders coming in from dealerships wanting the special version of the GTO. All in all, 6,833 of the 72,287 GTOs sold in 1969 were Judges.

The other Pontiac muscle entry, the Firebird, also continued to do well. In 1969 a special version of it was released called the Firebird Trans Am. The car included hood scoops to help catch fresh air for the engine. The name would imply it ran in the Trans

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91 Wangers, p. 185
92 Joe Oldham, *Muscle Car Confidential*
93 Leffingwell and Holmstrom p. 318
Am series like the Z-28 Camaro, but this was not the case. Instead, the Trans Am Firebird carried the 400 cubic inch engine, much larger than the maximum 305 allowed by the Trans Am circuit. But the racing circuit’s name had become popular, and Pontiac decided to cash in on it. Trans Am Firebirds would go on to be some of the most popular cars of the 1970s.

As a side note worth mentioning, 1969 was the only year GM offered all versions of the 427 in the Corvette. That year, only three Corvettes would be equipped with the highest rated version of the 427, the Z-L1. The engine’s cost was so high ($4,000 over the base price) that not many had the funds or the guts to order such a beast. Dan Yenko, one of the dealers mentioned above who purchased 427s to put them into cars they weren’t supposed to be in through the COPO program, struck a deal with Chevrolet in 1969 to sell him 500 Camaro’s and 500 of the 450hp version of the 427s at a good price, thereby making what were the most potent and rare of all Camaros. Yenko even briefly tried the 427 in the small Nova, but after a few cars, he decided they were just too front-heavy and unsafe to sell.

Ford

At Ford, Knudson was pushing for more performance across the board. He wanted Mustang to become “the best handling car” on the market.\textsuperscript{94} He also insisted there be two new versions of the Mustang, one for Trans Am racing, the other for all-out drag racing. These special cars would be labeled as “Boss.” The road racing car was the

\textsuperscript{94} Leffingwell and Holmstrom p. 272
Boss 302. It had a lightweight but high revving motor, and great handling characteristics. The price was steep, at $1,000 over the base price of $2,771 for a regular fastback, and only 1,934 were made, but they became legendary for their good looks and great handling. Ford also introduced a new big block, the 429, in 1969, and this was to go into the drag version of the Mustang (as well as Torino). The 429 was actually assembled by Kar Kraft, a sort of performance company Ford worked through. Because of union deals and the like, Ford had to actually make the Boss 429s as 428s, drive them to Kar Kraft, take out the 428 and put in the 429. Not the most efficient process, but they did manage to produce 859 of the outrageous Mustangs.

Steve Justice, the AACA member, recalled his time as a soldier from Vietnam, and just how big the muscle car movement was in 1969. He said:

(I was) stationed in Massachusetts. And outside the barracks there were all these muscle cars… 390 Cyclone, Boss 302, Nick’s Hemi Cuda, um, Charlie’s Chevelle, what was the Chevelle? 396? No, the big one… 475 horse power, 454. And so Sarge says were getting a new guy in next week. So that’s cool. I’ll never forget this guy: his name was Vinny Solandra from Philadelphia. And so the first question you have for a guy from Vietnam is “what unit were you in, what country?” And the next question is “what kind of car do you have?” Now I’m not making this up, he (Vinny) says “Toyota Corona” (Corolla) (Laughter) So I say “What the hell is that?” This is 1969. So we walk outside and there’s all these muscle cars and this little ugly, white, square thing and everybody asks, “hey are you some kind’a child molester?” (laughs) Nobody even knew what [Corollas] were in 1969.”

A military base full of young men loaded with a parking lot full of muscle cars is a perfect picture of 1969.

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95 Personal conversation with Steve Justice, Antique Auto Club of America member (April 2009)
1970

The year 1970 is widely considered to be the pinnacle of the muscle car era. More models, with more engine choices, were available in 1970 than at any other time. The power wars in Detroit were at an all-time high. But there were signs that things were changing. The need to build an economy car had come to the attention of the American carmakers, as they had been steadily losing ground to overseas competition. AMC would make the Gremlin, Ford would produce the Pinto, and Chevrolet would release the Vega, all in an attempt to sell cars in a new segment. All of those cars would become infamous as examples of poor quality. As a result, the poor reputation U.S. automakers have when it comes to small economy cars has never been completely shed.

In 1970 one of the most important laws that would impact the auto industry came from the newly-formed Environmental Protection Agency. The EPA was charged with cleaning up the pollution problems that had come from decades of unregulated dumping of waste products. Large cities, like Los Angeles, were starting to suffer from smog, and it had been determined that emissions from automobiles were a source of this brown, unhealthy haze. Muscle cars put out power, but they also put out lead, carbon monoxide, carbon dioxide, unburned fuel, and other contaminants. Moves would be made as early as 1971 to start to reduce those emissions.\(^\text{96}\)

\(^{96}\) Personal correspondence with Jim Gessner, Corvette specialist, (Nov. 2009)
General Motors

But it was still 1970, and muscle cars still ruled the streets. General Motors finally relented from its big-displacement ban that had hampered sales, and its divisions responded. The Chevelle received the 454 cubic inch engine in three forms, the LS4, which was good for 345hp, the LS5, which had a different cam and was good for 360hp, and finally the mightiest of the big Chevy engines, the LS6 with its 450hp and 500ft-lbs of torque. With 4,475 of the top LS6 being sold in 1970, it is a good indication that the mighty engine is exactly what Chevrolet buyers had been wanting to see. Oldsmobile put its 455, underrated 370hp, in the W-30 package, selling 19,330 of the top of the line 442s. Pontiac decided the 400 Ram Air IV was still good enough for its GTO, but by not putting in its biggest big-block engine like the rest of its brethren, it missed the boat, and sales were down 50%. Buick was the surprise player in GMs courts in 1970. They finally decided to give the Gran Sport a nice looking style, and on top of that they made a big engine to go in it. Called the GSX, it came equipped with a 455 cubic inch V-8, good for 350hp and 510ft-lbs of torque – the most torque of any car of the classic muscle car era. Who would have guessed that distinction would come from Buick?

The pony cars from GM would get a refreshing, but only after a long layoff due to a strike at GM. The recession that had began in December of 1969 continued through most of 1970, and hampered car sales and the general work environment at the manufacturing facilities. When the new, second-generation Camaro and Firebird finally came out as 1970½ models, they were well-received. The Camaro had a very distinctive
split bumper front end that did not carry the bumper past the protruding endura-nose on the car, leaving an open-looking grill. The Trans Am Firebird was a bit less conspicuous than its sister model Camaro, but it quickly became known for being the best-handling pony car, and it ran the streets quickly with a 345hp 400 cubic inch Ram Air engine.97

Ford

The Ford Mustang continued to evolve, and a popular option package from 1969, the Mach1, was continued for 1970. Mach1s always carried V-8s and special styling. The Mustang was getting bigger, and the popular engine choices were the 302 and 351, on top of the six cylinder, which has always been the leader in sales. The Torino also got a facelift, but otherwise, Ford’s entries remained largely the same.

The Mustang was restyled for 1970. The car’s dimensions had grown, reflecting a change in tastes that would continue through the decade, and not just on the Mustag.. Photo by William McKinney

97 Leffingwell and Holmstrom, p. 345
Chrysler made some big waves in 1970 by making some of the best looking pony cars of all time. That year, Chrysler finally got its redesigned pony cars out on the market, and they were a hit. Called E-body cars, and named the Dodge Challenger and the (redesigned) Plymouth Barracuda, these cars would become some of the most sought after cars of modern times for their great muscular styling and array of powerful engine choices. The cars were big for pony cars, allowing for any engine choice in the Mopar lineup but also blurring the line between pony car and classic muscle car. The hot version of the Challenger was the Road and Track model, or R/T, and the hot version of the Barracuda was simply called the ‘Cuda. Special versions of the cars called AAR Cudas and T/A Challengers would make their mark on the Trans Am circuit, since both offered great power and handling with their 340 cubic inch, 290hp, high-revving small block V-8s. If those who selected a Hemi-powered Challenger or Cuda still had that car today, they would be the owners of cars worth over a quarter of a million dollars. If they
selected a convertible, (as few did because of rising insurance costs for those cars) their
car would be worth even more.

Chrysler finally got the muscle car styling right for its pony cars in 1970. The 1970 Dodge Challenger and Plymouth Barracuda were very well received. The cars also came in wild colors, like the “Plum Crazy Purple” shown here. Because of the high insurance cost of combining a big block with a convertible, both were rarely purchased together, making them rare and valuable today. Copyright Chrysler Corporation

1971 – Getting Ready for Unleaded Fuel

1971 saw the beginning of the end for the muscle car. The first attack on the cars came from the insurance industry, but those were easy enough to circumvent. All the automakers had to do was to underrate the power of their big blocks. The next hurdle was more serious. The EPA told the automakers they were going to have to install catalytic converters onto their cars. The catalytic converters would use a matrix of platinum covered materials to help remove pollutants from the exhaust systems of cars. Unfortunately for the automakers, lead would clog the system, and all of their high-compression engines ran on leaded gas. The lead helped to keep the engine parts
lubricated under high compression, so now without it, it was obvious the cars were going
to have to scale back compression (and power) in preparation for the 1975 law.\textsuperscript{98}

What were the companies to do? Chrysler had just introduced some of the coolest
looking cars the world had ever seen, and now they had to be detuned. All of the B-body
muscle cars were redesigned for 1971 in an attempt to keep their look contemporary, but
one of the nameplates, the Dodge Coronet, was dropped. The cars continued to look
more like big versions of pony cars, but with more swollen back ends. The look was
pretty cool, but buyers knew the engines didn’t have the same kick they had enjoyed
previously. The only engine that did not receive any detuning from Chrysler was the
mighty Hemi. There was no way they were tearing down the king of engines, and so, for
the brave souls who bought one in 1971, they still got all the potency of the original
beast.

At General Motors, compression numbers fell slightly for 1971, but sales were
affected. The high output LS6 454, now rated at 425hp rather than 450, was no longer
offered in the Chevelle, it was only offered in the Corvette, the only performance car GM
has always furiously defended since its introduction. Oldsmobile produced 350hp in its
455 W-30 442, but even with that respectable number, sales fell to 7,589 units. Pontiac
took things even harder. They finally allowed their 455, now rated at 335hp, into the
GTO and Firebird, but sales still faltered, especially for the GTO. The once proud father
of muscle cars sold only 10,532 cars in 1971.

\textsuperscript{98} From personal correspondence with Jim Gessner
AMC took advantage of the other companies’ lessening of horsepower to keep theirs high in the newly-redesigned Javelin. The car came with a high compression 401 cubic inch V-8, good for a GTO matching 335 horsepower. The car had Corvette-like wheel bulges in the fenders, designed to allow for bigger wheels and tires underneath. Inside, the dash was wrapped around the drivers, so all gauges faced them. In 1971, AMC even won the Trans Am series in its redesigned Javelin, proving that the little company could make a car that could compete with the big boys.

Ford allowed its Mustang to grow to even bigger proportions, as style preferences changed. The popular Mach1 model had a very flat looking rear window that stretched back at a low angle. Louvers became popular options to help keep sunlight from cracking the rear package deck. The car had gained weight and creature comforts, and performance was losing its grip. The movie Diamonds are Forever, the second James Bond movie to prominently feature a Mustang, helped the popularity of the new model, with a clever chase scene through the streets of Las Vegas highlighting the car. The Torino finally shed the Fairlane name altogether in 1971, with all intermediate Fords going simply by “Torino.” All engines other than the top 429 Cobra Jet power-plants received a drop in compression, as a precursor to unleaded fuel.

1972

By 1972, the muscle cars were losing their popularity for several reasons. One is that attentions were being turned elsewhere. The Vietnam War was still at the forefront of American consciousness, and there was other political malaise as well. In 1972 Nixon
visited China for the first time, but the Watergate affair also got started. There was the massacre at the Munich Olympic Games. In popular culture, a serious film, *The Godfather*, was the big hit at the movies, and Atari released its first video game, *Pong*. The women’s rights movements were in full swing, and women were allowed to run in the Boston Marathon for the first time. The threat of nuclear war hung like an ever-present cloud over everything. To many, it just seemed like the world was not the cool, sunny, convertible-friendly place it had been in the Sixties.

In the automotive industry, an important change took place in 1972. The Society for Automotive Engineering (SAE) mandated that engines be rated on net horsepower rather than gross horsepower. This meant that a lot of the misleading information about engine power was about to be cleared up. During the Sixties, engine output could be significantly misrepresented. It was normal practice for most companies to over-rate their small block V-8s and under-rate their big block V-8s. If the company wanted a higher rating, it would run the engine with no exhaust manifolds, with the biggest carburetor it could find, and no other accessories on the engine. If the company wanted to downplay its big block horsepower (for insurance reasons) it would run a tiny carburetor and restrictive manifolds to make it seem like the engine made less power. All that stopped in 1972, when cars were required to measure power at the flywheel of the engine with all standard equipment attached. This instantly made everybody’s favorite small block engine look like it had lost power overnight. Ordinary Americans didn’t understand net versus gross, they just knew the new numbers looked lower. Most of the lower numbers were mistakenly blamed on new smog equipment, and although engine
compression had lessened and lowered power somewhat, it had not done it as significantly as it looked. The really restrictive smog equipment would not come until a couple of more years, when power would in actuality be sapped from once-proud engines.\textsuperscript{99}

Chrysler still soldiered on with its big blocks in its B-body cars, but they were only about as potent as the small blocks had been a couple of years back, which still wasn’t bad, but after seeing what they had been capable of, it was less exciting. The good-looking E-body pony cars from Chrysler had only enjoyed two years of glory before being knocked down with everybody else. The biggest engine they ran in 1972 was the 340, which had not actually received smog treatment that year, but appeared weaker due to the new SAE horsepower ratings. The 340 of 1971 was rated at 275hp, and the 1972 model was rated at 240hp. It was still the same engine, but the psychological effect couldn’t be missed.

1972 would be the last year for the classic Chevelles before they morphed into big “colonnade” cars the following year. The Chevelles suffered from the same perceived drop in horsepower from 1971, although there probably was little to no difference in actual engine power. Camaro sales also suffered, and they would only sell a little over 68,000 models, their lowest number of any year from their introduction until 1990. The Pontiac Firebird would use a different head setup on its engine to help it compensate for perceived power loss. The 455 was the high output engine, and it was still good for some

\textsuperscript{99} Personal correspondence with Jim Gessner
serious power and torque. The GTO, meanwhile, was nearing its end. It had been re-established as an option for the Le Mans (just like the original) and was no longer considered a separate model. It suffered from the perceived loss of power, and its sales were down 45% from 1971 to a measly 5,811 units.

At Ford, the Mustang retained its 1971 characteristics, and was still a popular car. The Torino underwent the most drastic changes, being redesigned with a new, open “egg crate” grill. The car also featured less linear and more “coke bottle” styling. The engines were all detuned to low compression to allow running on unleaded fuel. Although still capable of some descent torque at low rpms, there was no high-end power left in the Torino engines.

1973

It was obvious the muscle car movement was in trouble, but in 1973 it received its death blow. That year, the Organization of Petroleum Exporting Countries (OPEC) announced it would quit selling oil to any nation that supported Israel in its conflicts with Arab nations. The Oil Embargo, as it became known, was the last nail in the coffin for muscle cars. People had to wait in line at gas stations to fill up since nobody had gas to sell. Prices for gas went way up, and all of a sudden it mattered that your muscle car was getting only 10-14 miles to the gallon.100

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100 My father was dating my mother during this period. He was a student at Clemson, and my mother attended Winthrop, about a 140 mile distance away. My father recalled driving his Torino back to Clemson one Sunday night after visiting my mother, and only passing one car the entire trip of over two hours, mostly interstate driving. That’s just how serious the clamps were on gas.
But the muscle cars tried one last desperate attempt to stay in the game. The Gran Sport Stage 1 Buick carried a 270hp version of the 455, and the Hurst/Olds 442 could only manage 5 horsepower better from its version of the 455. The once-proud GTO was now what Holmstrom and Leffingwell called “a sad option on the restyled LeMans.”

Ford and Chrysler both continued to make their pony cars, but they were now having to focus more on attention-getting graphics rather than attention-getting burnouts. The mighty Hemi, never detuned, was dropped from public consumption and would not reappear in a car again until the 21st century.

But there was one last hurrah to be had in the muscle car market. Pontiac, the rogue division, the guys who never cared if they followed the rules or not, had one last surprise for the whole EPA/Oil Embargo world. With emissions checks cracking down on engines, and personal styles changing, Pontiac made sure the Firebird Trans Am would still be a muscle car whether the world liked it or not. For 1973, Pontiac unleashed the Trans Am Super Duty 455, and they poured every trick in their high performance catalogue into it. The car came with a functional air scoop coming up through the hood, and introduced the giant bird graphic on the hood (affectionately referred to in pop culture as the “screaming chicken”). The Super Duty Trans Am had a big carburetor, a racing cam, forged connecting rods, aluminum flat-top pistons:

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101 Leffingwell and Holmstrom, p. 344
102 The giant “Screaming Chicken” hood decal had originally been pinned by Ted Schroeder for Pontiac in 1970. But as soon as GM VP Bill Mitchell saw it, he hated it, and called Bill Porter, chief designer of the 1970 Trans Am and yelled at him “that it looked like an Indian blanket on the hood,” and that it resembled a “Macy’s truck” with their billboard-like sides. “Get the damned thing off immediately,” Mitchell ordered. But by 1973 it made the perfect tool to stick it to the competition, and it proved wildly popular with car fanatics. (Information from firebirdta.com/makbird)
everything it needed to make it a real-deal muscle car, despite its 8.4:1 compression ratio. Rated in net terms at 290hp, the car was also given a 390ft-lb of torque rating, the same as the Hemi’s net rating! Pontiac built 396 Super Duty Trans Am’s in 1973, and another 943 in 1974 before gas prices finally forced it out of the market for good. But it was by any measurement the last of its kind, the last true muscle car ever to roll out of Detroit in the classic era.

And just like that, the era was over. No more muscle cars, only long black rubber marks left on the pavement.
CHAPTER TEN
WHY THE CLASSIC MUSCLE CAR ERA ENDED

A combination of factors led to the end of the classic muscle car era. First of all, insurance rates had become a rising problem. Steve Justice, from the Antique Auto Club of America, had mentioned insurance as a primary reason for the creation muscle cars in the first place. He said “Everybody wanted a Corvette, but nobody could afford the insurance. So that’s why [the muscle car era] started.” But by the 1970s, insurance had become a growing problem for muscle car owners as well. As the engine displacements kept getting bigger, so did the insurance rates. Eventually it got to the point to where the average person wouldn’t choose the most powerful engines because of the insurance premiums that came with them.

The next factor in the downfall of the muscle car was the new EPA regulations. Car companies had to install catalytic converters to control emissions, and the converters wouldn’t work with leaded gas. Leaded gas was needed for the high compression engines, so there was no way around the new law but to lower compression and horsepower. As the EPA set ever tighter emissions controls, more equipment had to be added to engines, like so called “smog pumps” to help recirculate exhaust gases so they could be burnt again in the engine. This equipment robbed even more horsepower from the engines of the cars. The guys at the AACA further confirmed this. Steve Justice answers in reply to being asked why the era ended, “It was 1968. The Feds passed the Clean Air Act in ’68 setting voluntary standards in 1970 that became mandatory in ’75. None of the [muscle] cars could comply. So starting in 71… no, the last real muscle cars
were made in 1970.  (Other guys argue 71 or 72….) “Well they started croakin ‘em
down,” Justice says.  “There was nothing after 1970.  You know you get like a ‘78
Corvette 454, it’s got like 170hp.  A Hyundai Accent will blow its doors off. That’s a
shame.”

A third, and quite drastic, factor in the downfall of the muscle car was the Oil
Embargo of 1973.  Without gasoline, there wasn’t much sense in owning a muscle car
that got 10-14 miles to the gallon.  And with the prices of the gas that was available to
buy going through the roof, the demand for such powerful, thirsty cars dwindled quickly.
I know a man who sold his Roadrunner, which was only a few years old, for just $350
once the gas crunch hit.  Wayne Hadden, a gentleman who is a member of the AACA and
an owner of a convertible 1971 GTO, gave gas price as the main reason for the end of the
era.  When asked why the muscle car era ended he said “Well, I don’t know for sure, but
I know when gas went to 55 cents a gallon, I thought I was going to have to start
walking. So those gas guzzlers were sitting on all those used car lots.  A buddy of
mine bought a Ford Torino, a Cobra… a Cobra Jet [used].  It was the fastest thing I ever
sat in.  Heavyweight kinda thing.  Even then we couldn’t afford the gas.  Him and I
together.  I just remember those cars, the Super Bees, the big engine cars like that, they
sat in the car lots, they couldn’t hardly give ‘em away.  I’m sure that was the main

103 Personal conversation with Steve Justice, AACA member, (April 2009)
104 Gas had previously held steady at around 25 cents per gallon.
reason.”

Much like the more recent spike in gas prices, when once-expensive SUVs could no longer bring a good price, the muscle cars of the 1960s and 1970s were no longer in demand once gas hit the high-water marks of the early 1970s.

And the final reason, and perhaps only one automakers could have seen coming all along, was that the baby boom generation was simply getting older. The kids who were once in their teens and early twenties, were now in their late twenties and early thirties. Instead of hauling butt down the drag strip, they needed to haul their kids to school. The era of the station wagon was coming in, and the era of the muscle car was going out. And even for those who did not have children, the tastes of society had been altered from the Sixties to the Seventies. People started buying cars that promoted personal luxury rather than performance. Hard running engines gave way to soft seats and a cushy ride. Air conditioning became ever more popular. Horsepower-robbing conveniences like power steering and power brakes started to appear as standard equipment instead of options. Eight-track and cassette players were more sought after than cubic inches. And even for those not-so-family types, the drug market of the 70s, with its prominence of cocaine use, gave rise to pimped-out big cars with huge amounts of space in the backseats for less than legal pursuits.

Yes, the times had changed. It wasn’t the early Sixties, with the bright eyed, clean cut, All-American male yearning to go fast. It wasn’t even the late Sixties, with young people trying to impress each other and get away from their “old fashioned”

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105 Personal conversation with Wayne Hadden, AACA member, (April 2009)
106 It is surprising to see the costs for various options on cars of that vintage. The audio options were almost as expensive as ordering bigger engines.
107 Leffingwell and Holmstrom, p. 349
parents in their newest cool car. It had become the mid Seventies, a rather down time in
US History. The integrity of elected officials was in question, people were concerned
with social movements ranging from anti-war, to racial equality, to sexual equality.
Things just weren’t what they used to be. As Holmstrom and Leffingwell suggest, in
the early Sixties, a muscle car buyer was likely running towards something at full speed,
but by the time the muscle car movement ended in the early Seventies, he was likely
running away.\footnote{Several former muscle car owners mentioned this phenomenon. It seems their tastes changed, or society somehow changed. It was hard for them to put their finger on it, but they all knew something that once was had passed, and things from there forward were going to be different.}

\footnote{This idea is from \textit{The Muscle Car} p. 14}
CHAPTER ELEVEN
WHAT THE MUSCLE CAR MEANT TO AMERICA

How the Car Affected Society

Did the muscle car change society, or was society responsible for the muscle car?

Jim McGowan of the monthly muscle car magazine *Hemmings Muscle Machines* would vote for the latter. In the August 2008 edition of HMM, McGowan wrote in response to his own question of “Why do you like muscle cars?”

I remember those chrome-festooned Fifties behemoths at the auto show, up on revolving stages with dancing girls, spotlights, orchestra music and so on. As kids we actually waited all summer for the September unveiling of the new models and colors. (Notice here how color was a big deal in those days). It was a very different time, in a very different world. Excess was expected, even demanded by new-car buyers. You needed oodles of chrome, two-tone pastel colors and modern convenience options to be the big man on the block. You also needed a job that paid more than $1.25 an hour!

I think this era was what affected me the most, and started me down this long road of enjoying most vehicles that move under their own power…Hanging around [neighborhood hot rodders] exposed me…[to] muscle cars. Had the cars not done it for us, during the Sixties, enthusiasts would have created their own muscle cars with engine, trans, and rearend swaps going into lightweight bodies. One way or another, it was going to happen. Door-slammer drag racing had a profound effect on the car culture of the Sixties, and in my opinion, the muscle car phenomenon is a direct result of this sport. Detroit realized there was a big, young and vibrant crew of customers that they were not reaching when selling “your daddy’s Oldsmobile.”

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The cultural changes the automobile brought were so complete in the US that they even extended into the realms of business. As long distance travel became more commonplace, the traveler wanted to stay, eat, or get gas at places they were familiar with.\textsuperscript{111} Huge franchises started popping up all along interstates, and still do even today (Cracker Barrel, Pilot truck stops, etc.). Many of these places even have a particular architecture that attracts patrons (Golden Arches, front porches, etc.). In a very big way, the car had taken hold of America. In fact, it had not only taken hold, it had become a habit. To varying degrees, Americans love their cars. And even if they are not complete aficionados, the fact remains that as an American, a person almost always depends on car travel in the modern age. By 1990, 99.8 million out of 115 million workers age 16 or older in the United States rode a car, motorcycle, or truck to work.\textsuperscript{112} The gas crunch of the 1970’s and the recent 2008 spike in gas prices shed light on just what could happen should the car be rendered useless, or less effective, and it has shown just how reliant a society we are.

But what the muscle car really meant is best expressed by the young men who lived it. “It meant your status in society. It meant everything back then. It meant a babe magnet. All the girls wanted to ride in pretty cars. [The car I wanted most was] an Olds 442. Those were pretty awesome cars about the time I was about 16-17 years old,” said Wayne Hadden, the AACA member with the GTO convertible. To a young man, the muscle car was \textit{it} in the Sixties. It meant you had made it, you were cool, you were

\textsuperscript{111} Berger, p. 246
\textsuperscript{112} Tom Lewis, \textit{Divided Highways}, p. 292
tough, you were popular with the girls. It was youthful, it was fun, it was freedom.\textsuperscript{113}

And that is why today, even with the modern performance cars we have, the classics can never be beaten. They are capable of taking people where the new ones, can’t. They can travel time.

\textbf{Styling}

One of the most attractive things about an American muscle car is its undeniable styling. The cars are beautiful just to look at. This explains why people pay to see them in museums and why people flock to classic car shows and drive-ins. Perhaps this is the equivalent of haute couture or haute cuisine in France: clothes and food that might not be practical for everyday use, but the style brings something that is appreciated and desired. Styling was at the forefront of American design in the 1950’s and 1960’s, as explained by some of its foremost designers. In those days, automakers did not have many safety restrictions or emissions laws to follow. They were freer to design what they wanted to design, and so they went for what was appealing to the eye, as is reflected by the sentiments of two of the chief designers of that era, Frank Hershey, designer of the 1955 Ford Thunderbird, and Bill Mitchell, GM VP of Design 1958-1977. Hershey said:

\begin{quote}
You never hear of any of the great artists working in a committee. They were all single guys. And all the great automobile designers were single persons (one designer was free to design the car as he pleased). Sometimes people forget it. You know the old story that a camel was designed by a committee. You design a car with a committee, and you get what you get. You get a camel. I am not kidding you.
\end{quote}

\footnote{113 Other cars have tried to fill this “niche” over the years, with the most recent type being trucks, as those vehicles were about the only “equivalent” of an intermediate-sized vehicle with a V-8 engine… it was as close as young people could get to a modern muscle car until the 2008 Challenger brought the genre back.}
Unfortunately, many of Detroit’s cars designs did evolve by committee in the decades following the historic muscle car era, much to the lessening of the beauty of the design. Bill Mitchell put it well when he said “Don’t be simple like Simon. Give them something to look at… you throw a billiard ball to a guy, and he puts it down. But a baseball! He’ll keep playing with it [because of] the stitches.”\textsuperscript{114} Indeed the muscle cars had plenty of “stitches” like stripes, scoops, chrome, tachometers, spoilers, special wheels, and other ornamentation. Their styling was anything but plain. The styling was well received by the American public, especially with young American men.

Today, cars can not be designed so freely. There are so many more outside restrictions placed on an automaker. The cars have to pass tight emissions laws as well as strict safety standards. When a carmaker brings a design up for testing, it needs to be right the first time, or it will cost the company plenty of money, not only in the redesign, but also in the retesting. This simple lesson in economics is a big reason why large companies like GM and Ford have had to use the same engines across multiple brands. Once upon a time, a Chevrolet engine was different from a Buick engine, but now that is not often the case. And with the tightening economy, some of the most famous brands of muscle cars of the sixties have gone away for good, like AMC, Plymouth, Oldsmobile, and most recently, one of the most brash muscle car producers of all, Pontiac.

\textsuperscript{114} Hershey and Mitchell quotes from Edson Armi, \textit{The Art of American Car Design, the Profession and Personalities}, title page. Penn State Univ. Press, Univ. Park, PA, 1998
Overall, I think the muscle cars stood for something important in American history. They were very much a picture of who we were. Our culture was American, and we were proud of it. We liked to be the best. We expected to win wars. We liked being the first to the moon. There was passion in Detroit to make cars that were the best. If Chrysler didn’t like getting beat by Ford on the NASCAR tracks, did they just take their beating and go home? Heck no! It meant something to work to be the best in those days, and that is exactly what the companies did. If rules were set up that stopped their progress, innovative men found ways around those rules. And the cars themselves… they are so much of our cultural psyche. Many people reminisce about their old muscle car. Who cares if they even had to replace spark plugs and retune a carburetor every now and then? That just made you more a part of your car. The bond was so powerful that it almost became an extension of who you are. Although muscle cars accounted for a marginal percentage of all the cars sold in the Sixties, they were still the defining automobiles of the time. They were the ones that brought people into the showrooms. They were the ones the conveyed brand image. They were the ones that hooked a young person on a particular brand (hopefully, the automakers thought, for life). They are the most kept and restored of any cars from the past, and even today the demand for aftermarket parts to keep these great machines on the road is a strong as ever.

In many ways, the cars people drive still do tell us what we value. In the Sixties the muscle cars personified being cool, driving fast, and loving life. In the Seventies, it
was kids and personal luxury, with the station wagons and big, plush cars. In the
Eighties, it was fuel economy and reliability, as compacts and imports took over the
market. The Nineties were embodied by the SUV with its larger than life characteristics
and excessiveness.

The Future of Muscle Cars

And so what is next? Will there ever be another muscle car movement? I would
argue that the times we are living in are the second movement of muscle cars, albeit a less
pronounced movement than the first. In 2003, Ford brought back its Mach1 Mustang,
with functional shaker scoop and all. In 2005, they really went retro, restyling the
Mustang to make it look as much 1968 as it could be while still meeting modern safety
standards. The cars were runaway successes for Ford. Chrysler has had a resurgence of
its Charger and Challenger lines, thanks largely to its new Hemi engines and their
massive horsepower. Despite the new cars being weighed down with airbags and
electronics, they still produce performance like their predecessors. The Challenger in
particular is a major attempt to recapture the 1970 E-body style, and by all accounts,
Dodge nailed it. The difference is the cost of the new cars, which is above what a young
man can afford.\footnote{Chevrolet.com lists the 2010 V-8 Camaro SS starting at $30,745. The Dodge.com website lists the 2010
V-8 Challenger starting at $31,585. Either car can easily gain $3,000 more dollars once common
accessories are added. (Websites accessed Nov. 2009)}

Chevrolet has just unveiled its newest Camaro, and even its entry level V-6 is
good for an amazing 304 horsepower! And the V-8 makes over 400. With new
technology, power can be made from engines that still burn clean, and get better fuel economy than their forefathers ever thought possible (usually around 24mpg on the highway for these models). But the time may be limited if you want to get one of these “new classics.” In its July 2008 issue, Motor Trend tested a new SRT-8 Challenger against a new Shelby GT500 Mustang. The magazine cover read: “The ‘70s were never this good – nor this fast.” And inside they called their article “Time Travelers,” saying “Nixon may not be in the White House, but among the Big Three it’s 1970 all over again.” By June 2009 the magazine had all the cars in its stable for the showdown it had been hoping for: Chevrolet Camaro vs. Ford Mustang vs. Dodge Challenger. Despite a bad economy, despite upcoming fuel restrictions, despite a world full of hybrids and so-forth, each of the Big Three managed to get their modern muscle machines on the road. The article was titled “Smoke ‘em while you’ve got ‘em” concluding “Unless history somehow repeats itself yet again, America’s greatest-ever four-wheeled ponies may now be witnessing their last golden sunset.”

And so they may be. It would seem that the Obama administration’s plan to move the fleet fuel economy up to 35mpg (from the current 25mpg) will mean muscle cars, at least in the V-8 form we all know and love, may not have a place in the future. There will still be men who want to go fast, and there will be some way to accomplish that I am sure, but the thrill of a loud, powerful gasoline engine rumbling in front of you and the sound, feel, and smell of the exhaust gases pulsing through the pipes under your feet may be something of the past that can never be recreated again. Indeed I agree, if you can, do

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116 “Smoke ‘em While You’ve got ‘em,” Motor Trend (June 2009)
not miss this chance to own one of the most iconic cars America has ever produced.

Long live the muscle car!
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Much of the information contained in this paper has come from numerous conversations with people connected in some way to muscle cars. Some were average men who drove them in the 1960s and 1970s. Others were more involved, actually being part of racing teams which ran these cars through the Trans Am circuit (men like Ron Fournier, Jim Gessner, and Parnelli Jones). Others were men who drove them at one time, sold them, and now have a renewed interest in old cars through organizations like the Antique Auto Club of America. Also, original advertisements and owners manuals were used. The horsepower figures listed throughout the paper are from *The Muscle Car* by Randy Leffingwell and Darwin Holmstrom, as are the sales figures unless otherwise noted. The images used are mine where listed. The others are used under free use, and are for critical analysis.

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